e-Studio 223CS

Online Technical Training

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e-Studio 223CS Online Technical Training

This is the online Technical Training for e-Studio 223CS. This material is to be used with eS223CS Service Manual which can be downloaded from Topview.

Sections 1 to 8 explain the technical aspects of this product.

1) Product Concept
2) General Specification
3) Hardware Basic
4) For Service Man use
5) End user functions
6) Printer Driver
7) EFMS ver 5.0
8) Frequently asked questions

There is a section on disassembly with videos to show the disassembly process.

I. Product Concept

Product Concept

e-STUDIO223CS

- has ADU.
- has a scanner capable of double-sided scanning.
- is a A4 colour MFP capable of duplex printing.
- is only 444 mm high.
- weighs approx 29 kg
- is ergonomically designed, space saving and brings document handling closer to the workgroup.

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II. General Specification

General Specification 1/13

Copier			Standard
Network Printer			Standard
Scanner			Standard
Fax			Standard
Internet fax			Standard
Network Fax			Standard
PC Fax			Standard
Processor speed			533MHz
Memory	**System**	Standard RAM	256MB
		Maximum RAM	768MB
		Standard SD card	N/A
		Optional SD card	N/A
	Fax	Standard	N/A
Printing method			Electrophotographic printer with LED array for light source
Scanning method			Flat bed scanning or RADF scanning with CIS sensor
Control panel			40 keys; LCD (95.9 x 52.0 mm), 9 LEDs
Connectivity			USB 2.0 High Speed, 10/100 TX Ethernet
OS Compatibility			Windows 2000 / XP Home / XP Professional (32-bit & 64-bit) / Server 2003 (32-bit & 64-bit) / Server 2008 (32-bit & 64-bit) / Server 2008 R2 / Vista (32-bit & 64-bit) / Windows 7 (32-bit & 64-bit); Mac OS X 10.3.9 to 10.6.4

General Specification 2/13

Warm up time		Up to 60 seconds from power on & up to 32 seconds from power save
Power supply		Single phase 220-240VAC, frequency 50/60Hz +/-2%
Power consumption		Typical: 500W; Max: 1170W; Idle: 100W; Power Save: <20W; Sleep: <1.5W
Noise level **(Sound pressure level)**		Operating-Printer: <52dB(A); Operating-Copy: 54dB(A); Standby: 37dB(A); Power save: Inaudible
Dimensions (WxDxH)		427 x 509 x 444mm
Weight		29kg (Incl. All consumables)
Duty cycle	**Maximum**	45,000 pages/month
	Recommended	Up to 5,000 pages/month
Supplies yield	**Black Toner ctrg**	3500 pages
	Cyan Toner ctrg	2000 pages
	Magenta Toner ctrg	2000 pages
	Yellow Toner ctrg	2000 pages
	Image drum**	20,000 pages
	Transfer Belt	60,000 pages
	Fuser Unit	60,000 pages
	Note	* Toner: Number of A4 pages yield compliant with ISO/IEC 19798. Printer shipped with toner for 2,000 pages yield compliant with ISO/IEC 19798. ** Drum: Average life of 3 pages per job from tray 1 in simplex mode. Units ship with a set of 1000-page toner cartridges (CMYK)

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General Specification 3/13

Paper Handling	**Duplex**		Std.
	RADF (50-sheet, 80gsm)		Std.
	Paper Capacity	**Standard**	Tray 1: 250 sheets of 80gsm; Multi-purpose tray: 100 sheets of 80gsm
		Optional tray	Tray 2: 530 sheets of 80gsm
		Maximum paper capacity	880 sheets of 80gsm
		RADF	50 sheets of 80gsm
	Paper sizes	**Tray-1**	A4, A5, B5, A6
		Tray-2 (Optional)	A4, A5, B5
		Multi-purpose tray	A4, A5, B5, A6, Envelopes (C5, DL, Com-9, Com-10, Monarch), Index Card (3” x5”) (75 x 125mm), Photo Size (4” x 6”, 5” x 7”)(100 x 150mm, 125 x 175mm), Custom Size (up to 1320mm length including banners)
		Duplex	A4, A5, B5
		RADF	A4, A5, B5, A6 (Simplex only)
	Paper Weight	**Tray-1/2 (Optional)**	64 to 176gsm
		Multi-purpose tray	64 to 220gsm
		Duplex	64 to 176gsm
		RADF	60 to 105gsm (duplex 60 to 90gsm)
	Paper output		Face Down: 150 sheets of 80gsm; Face Up: 100 sheets of 80gsm

General Specification 4/13

COPY FEATURES			
Copy Speed	A4 Copy speed	B&W	24ppm
		Color	22ppm
	Time to first copy	B&W	15 seconds or less (Flatbed)
		Color	High res.: 17 seconds or less Low res.: 14 seconds or less (Flatbed)
Copy Resolution			600x600 dpi
Copy features	Zoom		25-400%
	Pre-set scaling sizes		11 sets
	Copy Quantity Selection		1-99
	Sort		Yes (Default: OFF)
	Duplex		1-->2LE, 1-->2SE, 2-->2, 2LE-->1, 2SE-->1 LE: Long Edge Bind SE: Short Edge Bind

General Specification 5/13

COPY FEATURES		
	Nin1	2in1, 4in1
	Repeat	x2, x4
	ID Card Copy	Yes
	Continuous Scan	Yes
	Mixed size copy	Yes
	Document Type	Text, Text/Photo, Photo, Photo (Glossy)
	Resolution	Normal, Extra Fine
	Background Removal	OFF, 1 to 6 (6 levels, Default:3)
	Contrast	-3 to +3 (7 levels)
	Hue	-3 to +3 (7 levels)
	RGB	-3 to +3 (7 levels)
	Edge erase	Yes (5 - 50mm)

General Specification 6/13

PRINTER FEATURES			
Print Speed	A4 Print Speed	B&W	24ppm
		Color	22ppm
	Time to first Print	B&W	8.5 seconds
		Color	9 seconds
Printer languages			PCL6 (XL3.0 & PCL5c) PostScript 3 emulation,
Typefaces	Printer fonts		Scalable: 87 PCL Fonts and 80 PostScript fonts, PCL Bitmap fonts, OCR-A/B
	Barcode		12 types of one dimension with 28 variations: UPC-A, UPC-E, EAN/JAN-8, EAN/JAN13, Interleaved2of5, Code 39, Code 138 EAN/UCC-128, CODABAR, ZIP+4POSTNET, Customer barcode, USPS Zip Barcode, 1 type of two dimensions: PDF417
Print Resolution			1200x600dpi, 600x600dpi

General Specification 7/13

SCANNER FEATURES			
Scan Speed		Gray	2 sec/page (A4, 300 x 300dpi)
		Color	3 sec/page (A4, 300 x 300dpi)
Optical Resolution			1200x1200dpi
Document input			RADF, Platen
Contrast settings			7 levels
Supported format			M-TIFF, PDF, JPEG, XPS
Scanner features	Functions		Scan to E-mail Scan to Network PC Scan to USB Memory Scan to Local PC Scan to Remote PC
	Supported format		TIFF, PDF, JPEG, XPS
	Resolution setting		75, 100, 150, 200, 300, 400, 600 dpi
	File format		Color: PDF/TIFF/JPEG/XPS Mono(Grayscale): PDF/TIFF/JPEG/XPS Mono(Binary): PDF/TIFF/XPS

General Specification 8/13

SCANNER FEATURES			
	Encrypted PDF		Yes (Low/Mid/High)
	Compression Rate		High, Mid, Low
	Continuous Scan		Yes
	Edge Erase		5 to 50 mm
	File name		User defined
	Scan to E-mail	Edit destination type	To, Cc, Bcc
		E-mail address	Up to 100 addresses can be registered Group List: Up to 20
		LDAP support	Yes (Simple search/Advanced search)
		File name	User defined
	Scan to Network PC	Subfolder	User defined

General Specification 9/13

FAX FEATURES			
Fax features	Compatibility		Super G3 & G3
	Modulation method		ITU-T V.8/21/34/17/29/27ter
	Connectivity		RJ11x2(Line/Tel), PSTN, PBX Line
	Compression		MH/MR/MMR/JBIG
	Fax Resolution	Ext-Fine	8dots/mm x 15.4 lines/mm
		Fine	8dots/mm x 7.7lines/mm
		Normal	8dots/mm x 3.85lines/mm
		Photo	8dots/mm x 7.7lines/mm
	Handset		No
	External telephone		Yes
	ECM		Yes (default: ON)
	TX speed	Super G3	Under 2 sec. (Normal)
		G3	6 sec.
	TX/RX size	Width	216mm(Letter)
		Length	355.6mm(Legal14)

General Specification 10/13

FAX FEATURES			
	Memory backup		N/A (stored into Flash memory)
	Polling		Supported w/F code
	Fcode TX		Yes
	TTI		Yes
	Duplex scanning		Yes
	Dial	Direct dial	Max. 40 digits/dial
		Group dial	Up to 20 groups can be registered. Max. 100 destinations/group
		Speed dial	Up to 100 destinations can be registered
		One touch key	Supported
	Broadcast		Yes (Total: Up to 100 dist.)
	Duplex print		Yes
	Specifying cassette for Printing		Supported
	PC-Fax		Supported
	Internet FAX:		T. 37 simple mode + DSN, MDN

General Specification 11/13

Standard & Co-Packed Items

Items	
RADF	Standard
ADU	Standard
Tray 1: 250 sheets of 80gsm	Standard
Multi-purpose tray: 100 sheets of 80gsm	Standard
Image Drum Unit	Co-pack
Toners* (all colors)	**Co-pack (Yield 1000)**
Developers (all colors)	**Co-pack (Yield 1000)**
2 CD ROMs	Standard
Unpack/Setup Instruction	Standard

* Printer shipped with toner for 1000 pages yield compliant with ISO/IEC 19798

General Specification 12/13

Item Code and Description

Model	Item Code	Description
FC-223cs	4447 3122	e-STUDIO 223CS Colour Digital LED 4-in-1 MFP Inc. Duplexer & Network
MY-1037	4447 2106	2nd tray
GC-1310	4430 2211	256MB Memory upgrade
GC-1320	4430 2212	512MB Memory upgrade

Model	Item Code	Description
PS-ZT-FC26SK3K	4446 9823	Black Toner, 3.5K
PS-ZT-FC26SC2K	4446 9775	Cyan Toner, 2K
PS-ZT-FC26SM2K	4446 9774	Magenta Toner, 2 K
PS-ZTFC26SY2K	4446 9773	Yellow Toner, 2K
PS-OD-FC26S	4449 4208	Imaging Drum, 20K
FUS-26S	4447 2609	Fuser, 60K
BELT-TR-26S	4447 2206	Transfer Belt, 60K

Supplies Information
(Subject to changes till official launch)

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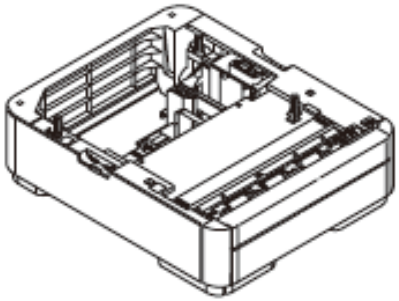
General Specification 13/13

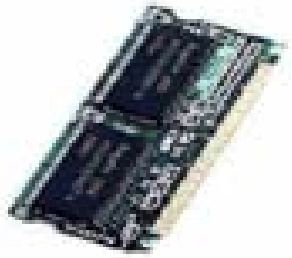
Options

GC-1310 Memory (256 MB)

GC-1320 Memory (512 MB)

MY -1037 2nd Tray





Consumables

Toner Cartridges : 2,000 pages (C,M,Y), 3500 pages for K

Image Drum : 20,000 pages (3 pages/job)

Transfer Belt : 60,000 pages (3 pages/job)

Fuser Unit : 60,000 pages

Note : A4 pages yield compliant with ISO/IEC 19798. Printer shipped with toner for 1,000 pages A4 pages

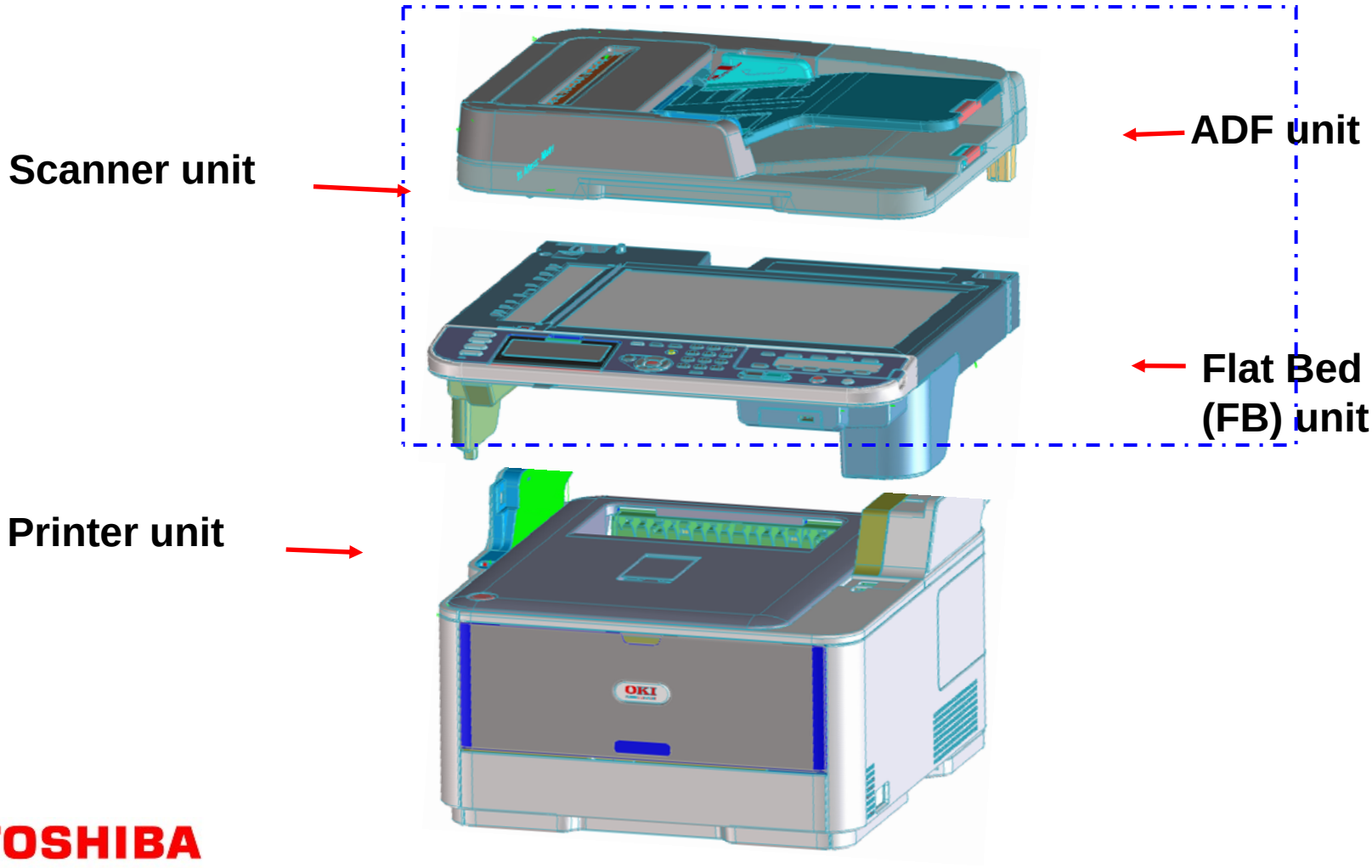
III. Hardware Basic

Hardware Basic 1/36

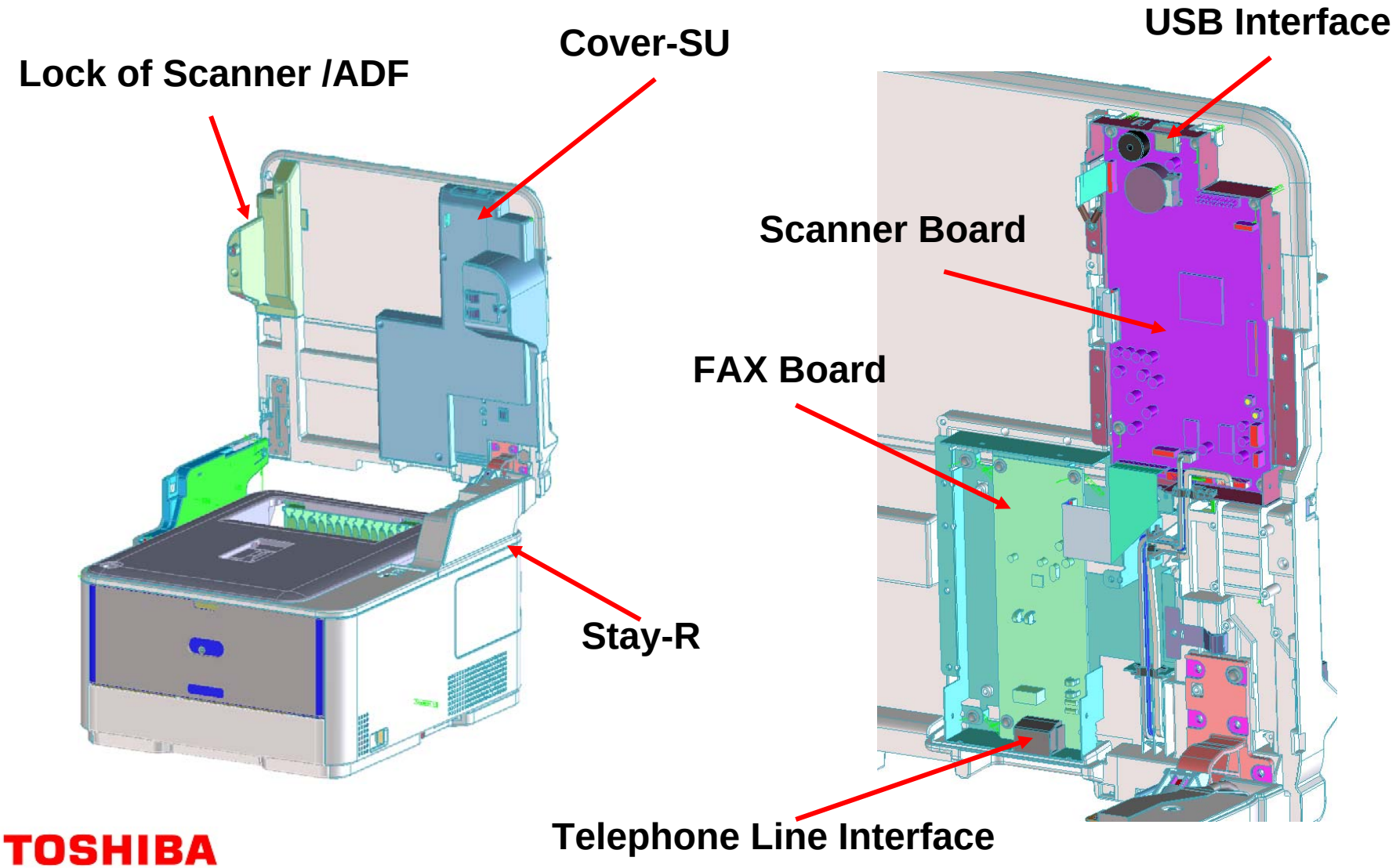
- Major Parts
- Printing Process
- Paper Feed Process
- Fuser Unit
- LED Head
- Toner Cartridge
- TAGS
- Image Drum Unit
- Duplex Printing
- Multiple Purpose Tray
- Firmware download
- Configuration Page

Hardware Basic 3/26

Major Parts



Hardware Basic 3/26

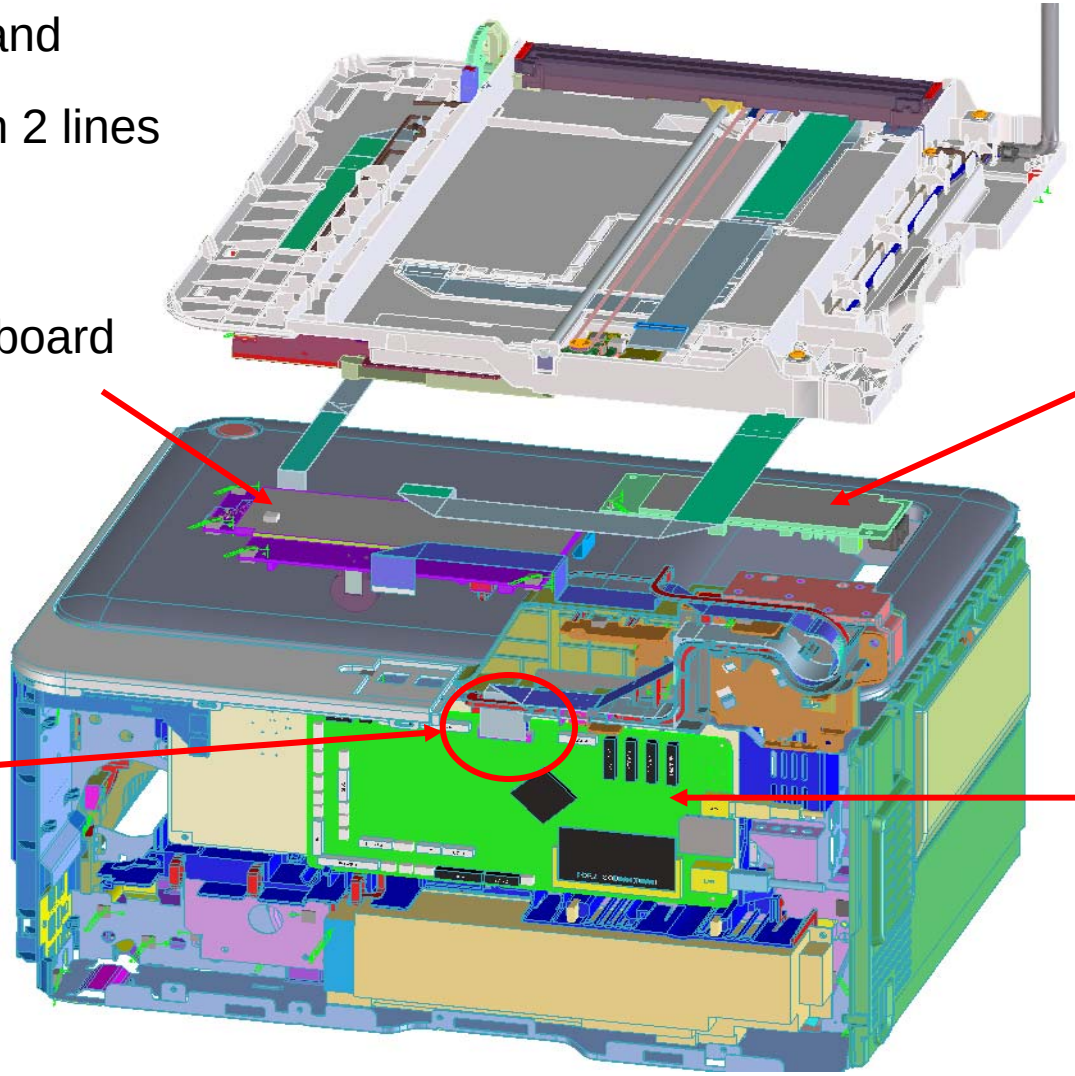


Hardware Basic 4/36

Scanner Unit and printer unit are connected with 2 lines (electrically).

Scanner board

FAX Board



Cable

- FFC
- Wires

PU･CU Board (printer control board)

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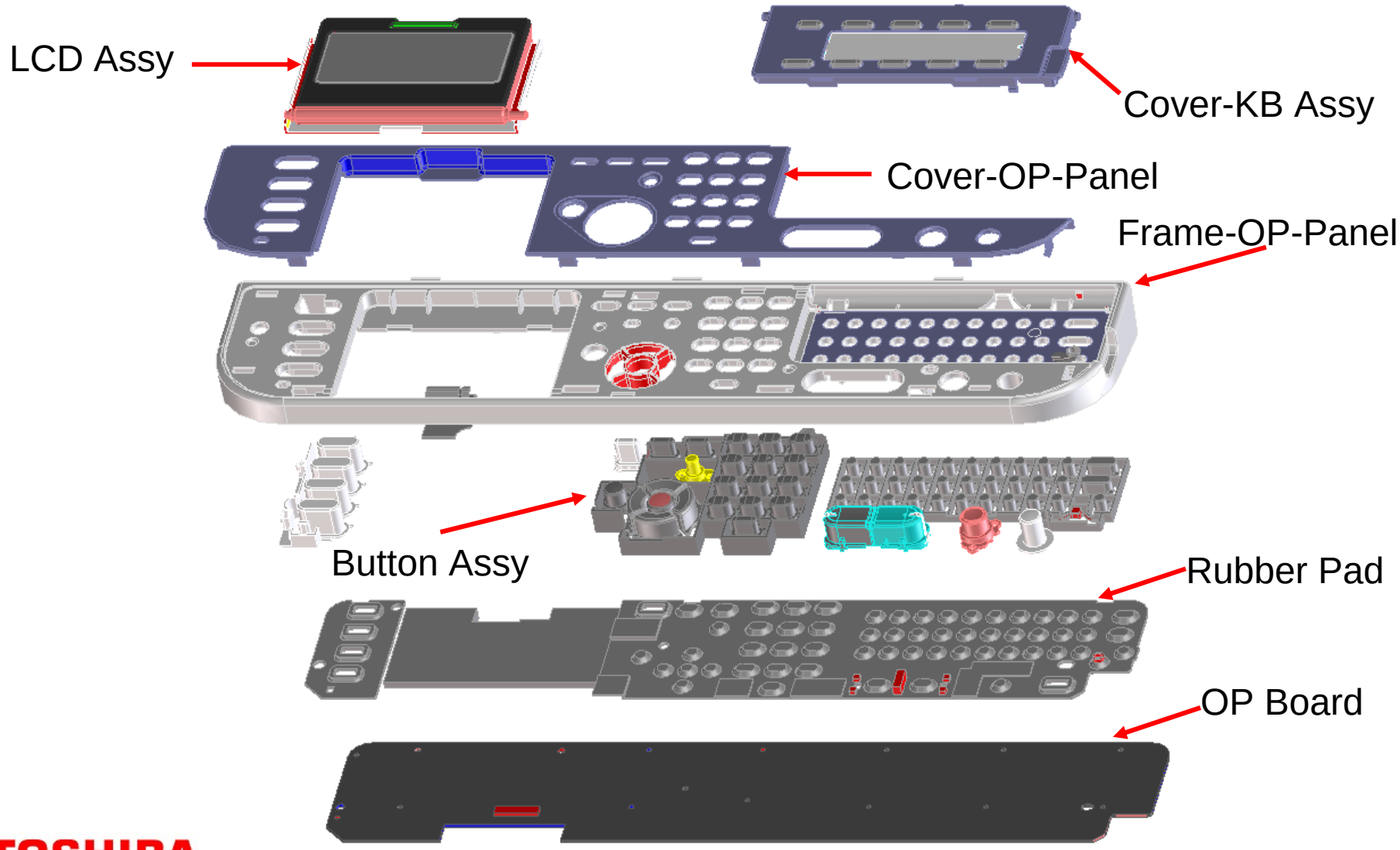
Hardware Basic 5/36



Hardware Basic 6/36

Printing Process

Electrophotographic process
The electrophotographic process is explained briefly below:

1. Charging
   A voltage is applied to the CH roller to electrically charge the surface of the OPC drum.

2. Exposure
   The LED head radiates light onto the charged OPC drum in accordance with the image signal. The electric charge of the radiated part of the OPC drum surface attenuates depending on the intensity of the light, thus forming an electrostatic latent image on the OPC drum surface.

3. Development
   Charged toner adheres to the electrostatic latent image of the OPC drum by electrostatic power, and forms a visible image on the OPC drum surface.

4. Transfer
   Paper is placed over the OPC drum surface and an electric charge is applied to it from the back side by the transfer roller, so that the toner image is transferred to the paper.

5. Drum cleaning
   The drum cleaning blade removes toner remaining on the OPC drum after the transfer.

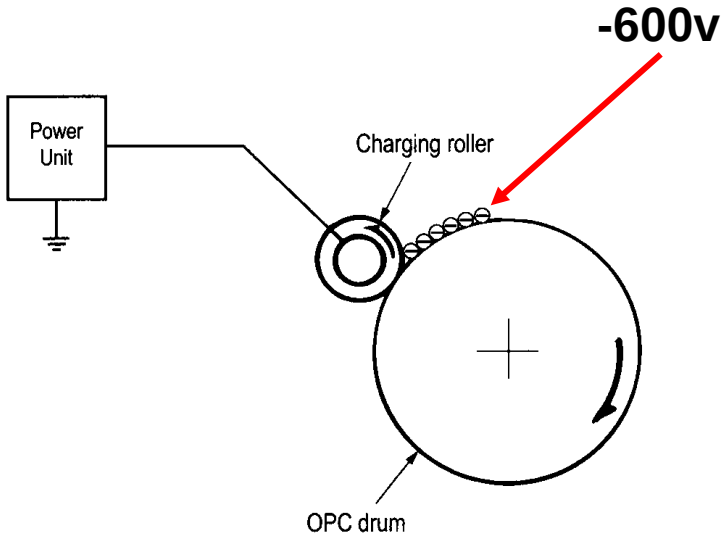
6. Removal of Electricity

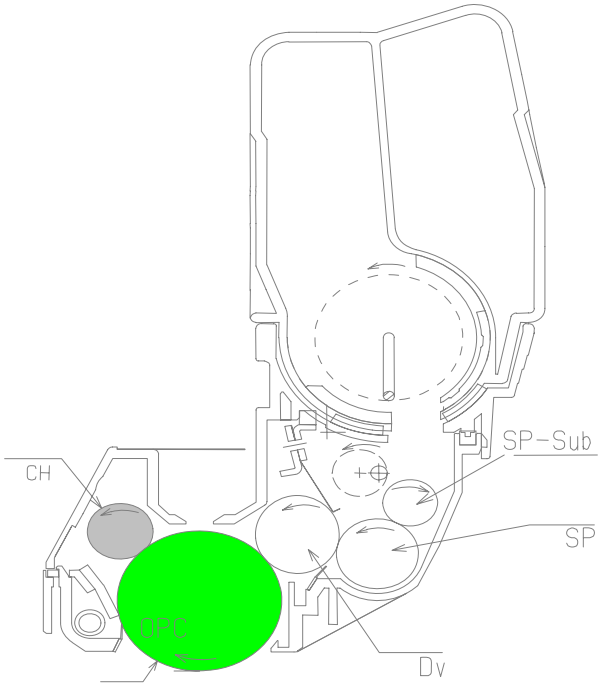
7. Belt cleaning
   The belt cleaning blade removes toner remaining on the belt.

8. Fuser
   Heat and pressure are applied to the toner image on the paper to promote its fusion.

Hardware Basic 7/36

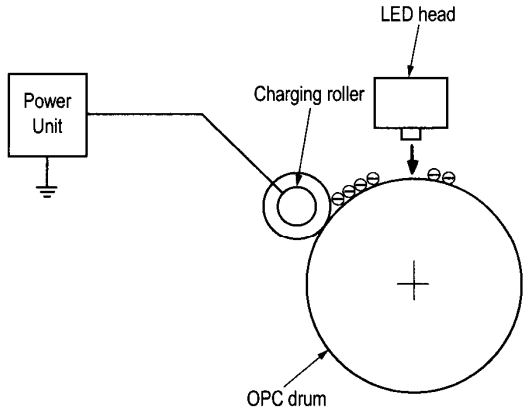
1. Charging
   A voltage is applied to the charging roller, which is placed in contact with the OPC drum surface, to charge the OPC drum surface.

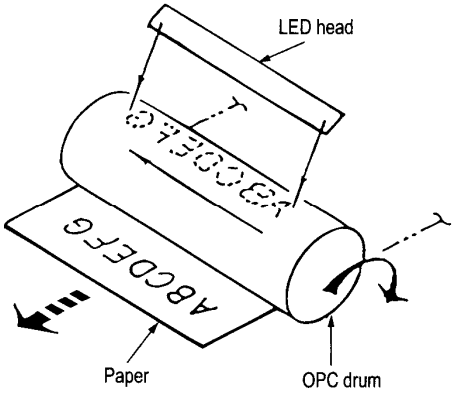


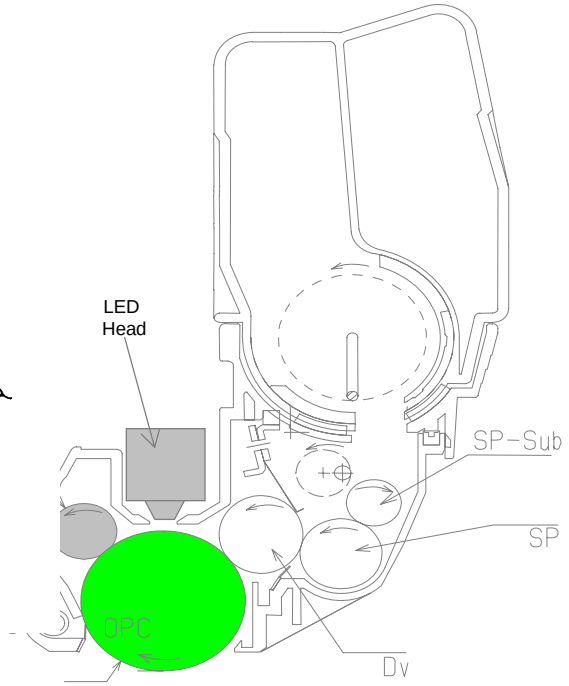


Hardware Basic 8/36

2. Exposure
The light emitted from the LED head is radiated onto the charged surface of the OPC drum. The charge of the radiated part of the OPC drum attenuates according to the intensity of the light, forming an electrostatic latent image on the OPC drum surface.





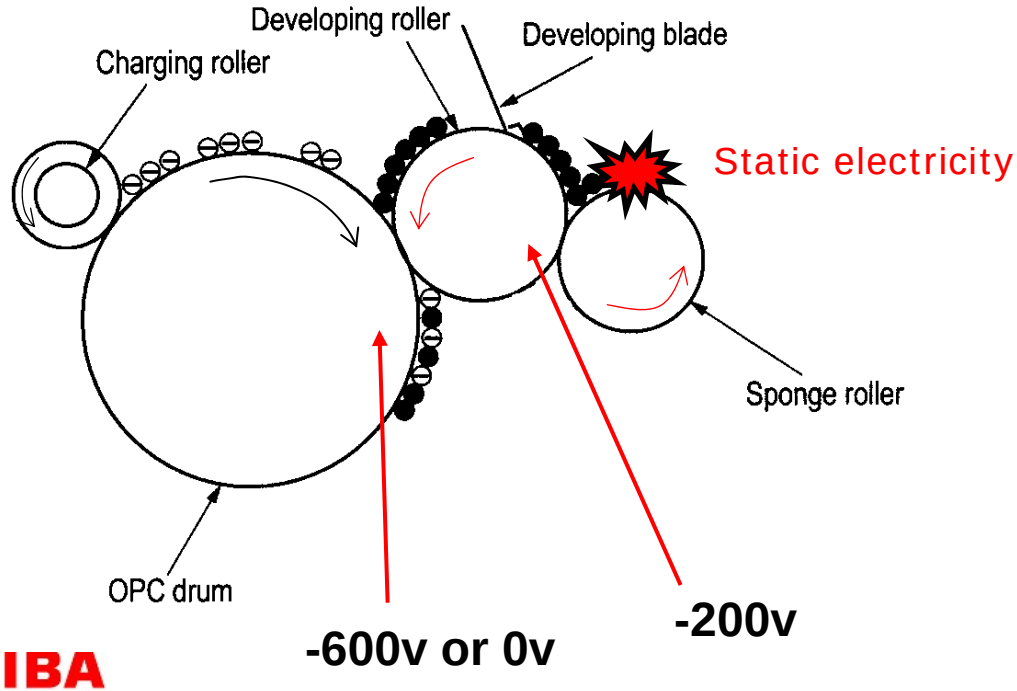


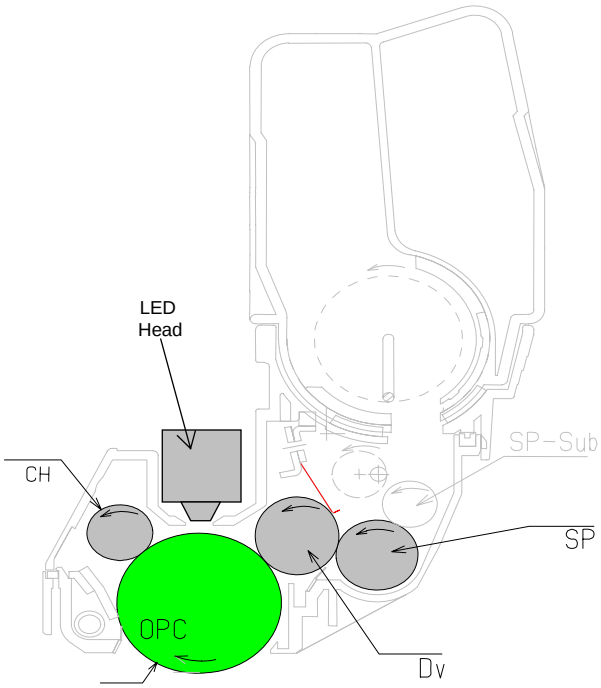
Hardware Basic 9/36

3. Development

Toner adheres to the electrostatic latent image on the drum surface, thereby turning the electrostatic latent image into a toner image.

1. The sponge roller allows the toner to stick to the development roller.
2. The electrostatic latent image on the OPC drum surface is turned into a visible image by the toner.



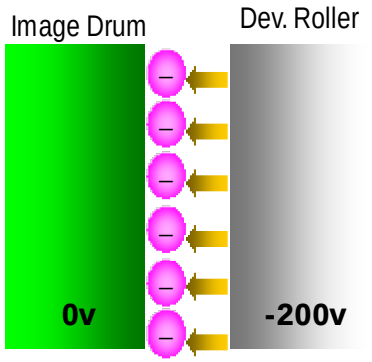


Hardware Basic 10/36

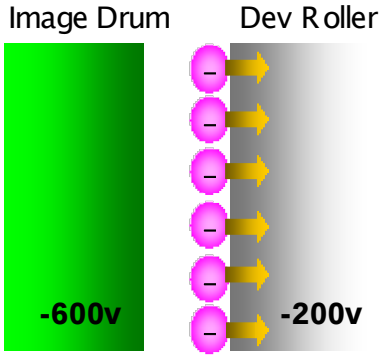
Toner transfer between OPC Drum & DV Roller

The DV roller has a potential of -200v. When this comes into contact with the OPC which has a potential of 0v in the exposed areas, negatively charged toner (at -50 to -100v) is attracted to the more positive exposed drum surface.

At the exposed area the following occurs:



At the non exposed area the following occurs:

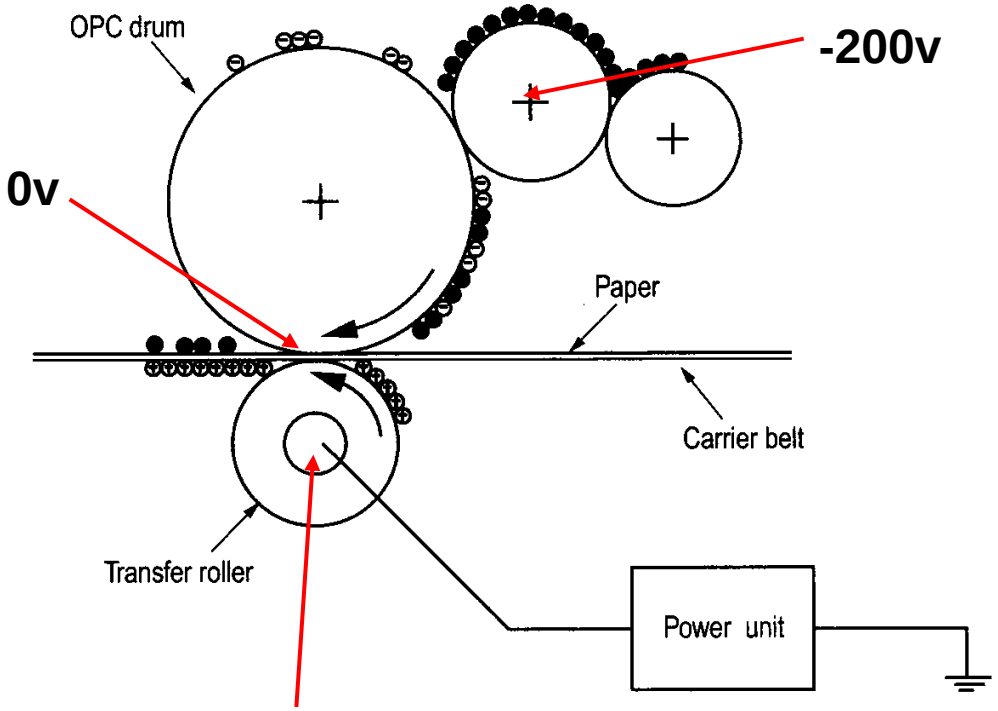


Hardware Basic 11/36

4. Transfer

A sheet of paper is placed over the OPC drum surface, and an electric charge is given to the paper from its back side by the transfer roller.

When a high voltage is applied to the transfer roller from the power source, the charge induced on the transfer roller moves on to the surface of the paper through the contact part between the transfer roller and the paper, the toner being attracted to the paper surface from the OPC drum surface.



The following occurs at the areas with toner:

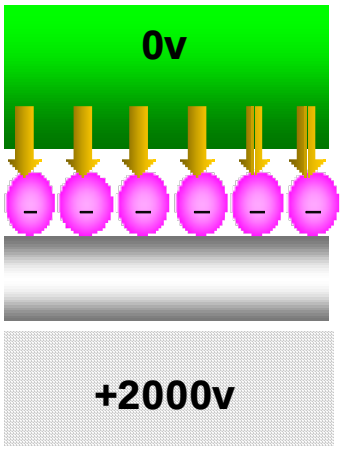


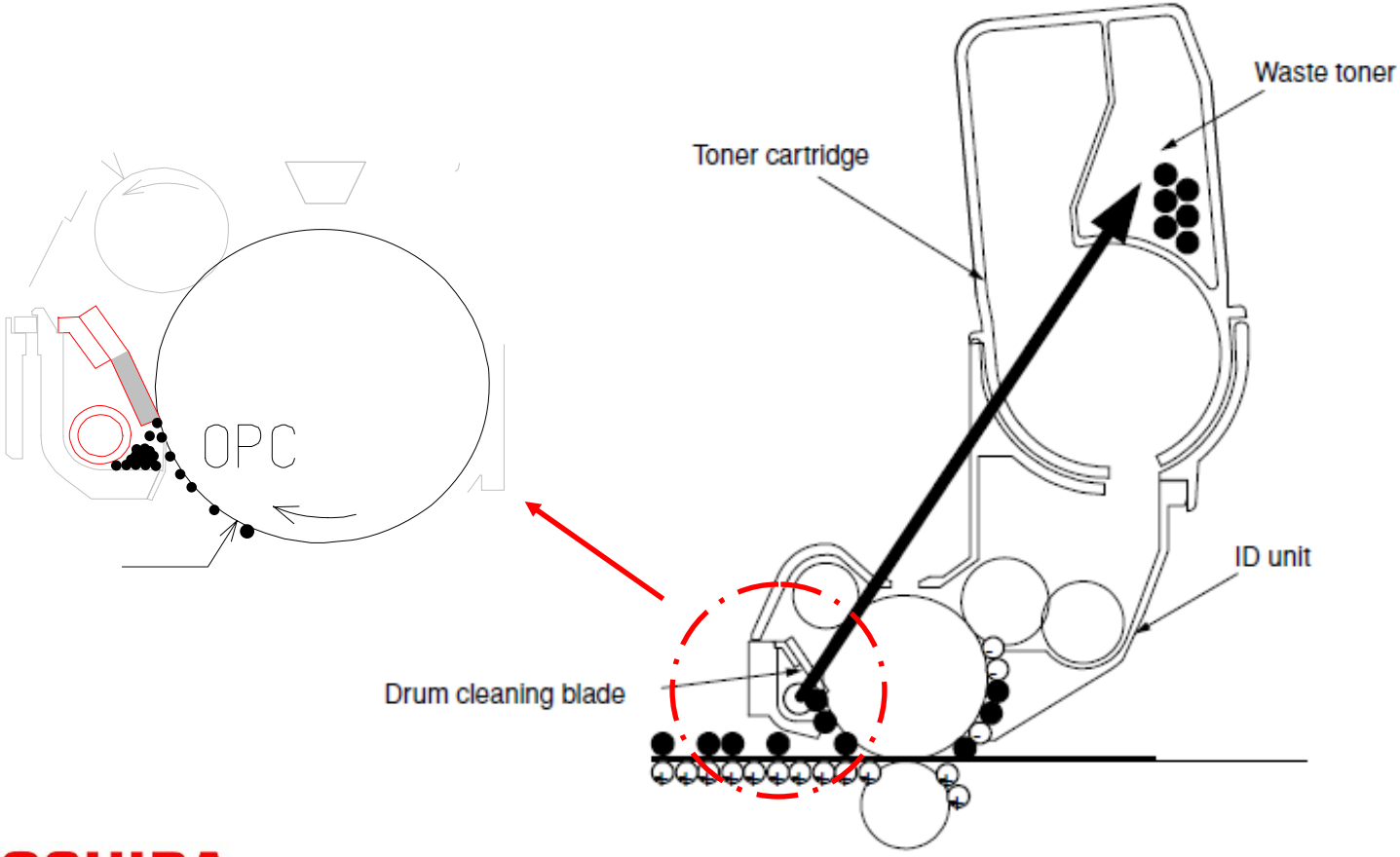
Image Drum

Paper

Transfer Roller or belt

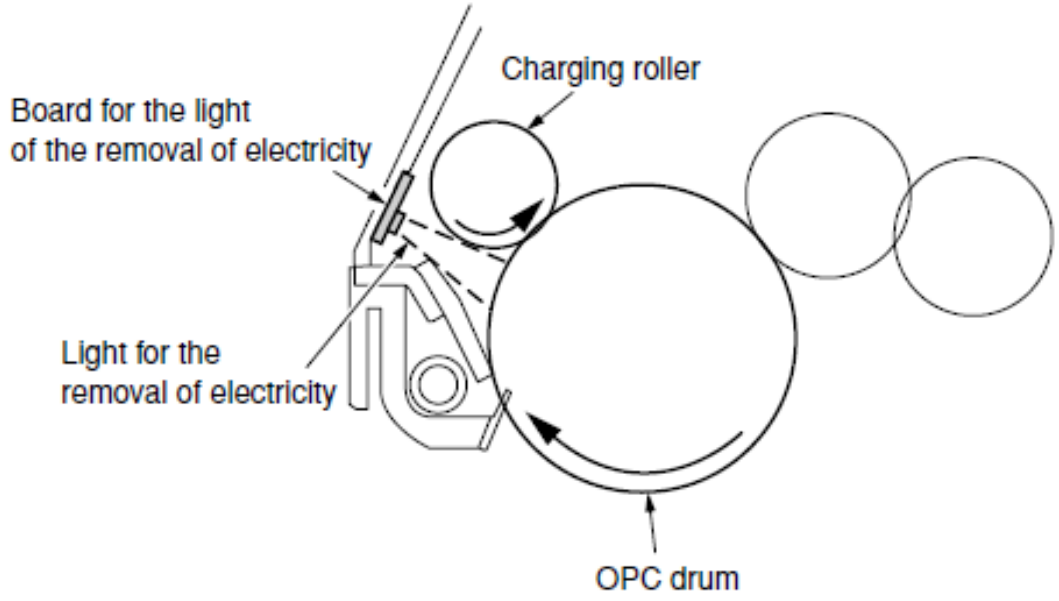
Hardware Basic 12/36

5. Drum cleaning
Unfixed toner remaining on the OPC drum is removed by the drum cleaning blade and collected into the waste toner area of the toner cartridge.



Hardware Basic 13/36

6. Removal of Electricity
Electrically charge on the OPC drum surface decveases by exppsing the OPC drum surface after transfer to the light.



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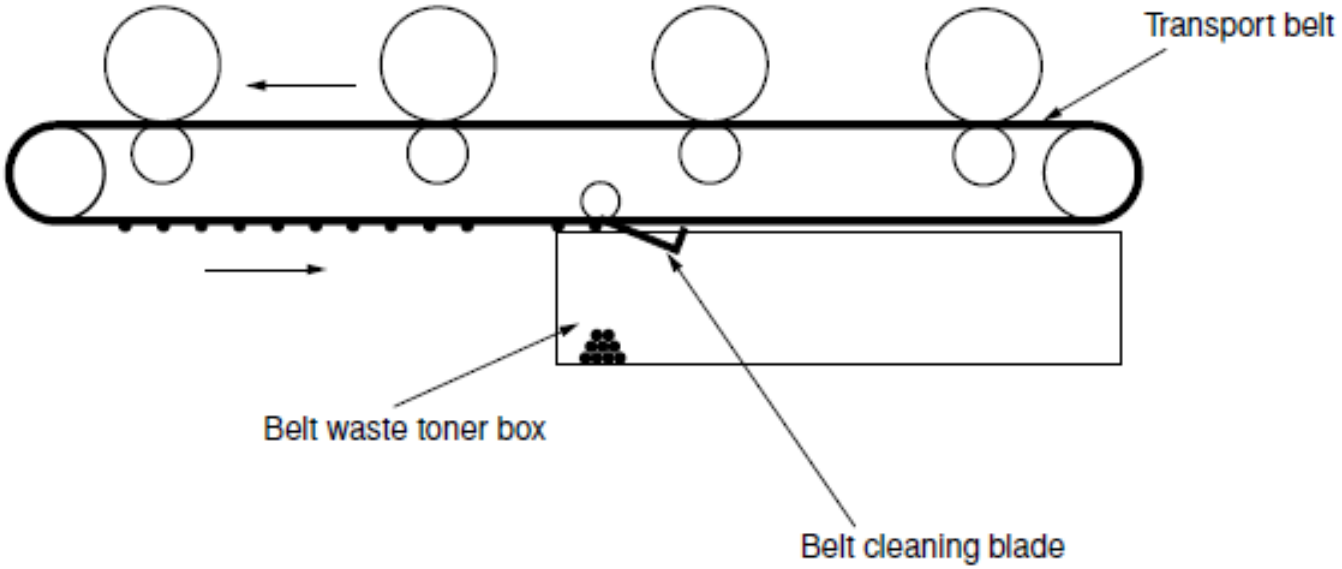
7. Belt Cleaning
   Toner remaining on the transfer belt is scraped off by the belt cleaning blade and collected into the waste toner box of the transfer belt unit.



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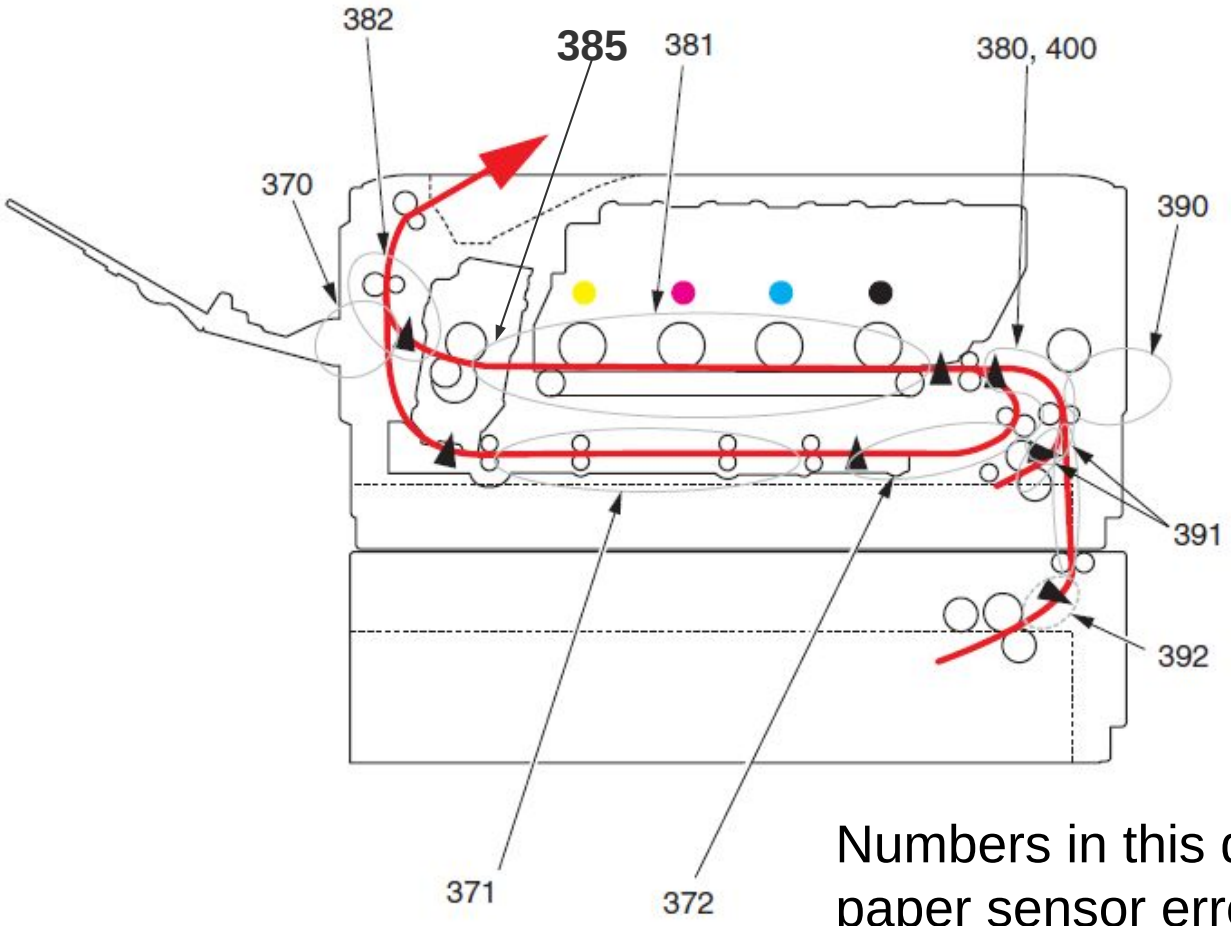
Paper Feed Process



Numbers in this diagram are paper sensor error codes.

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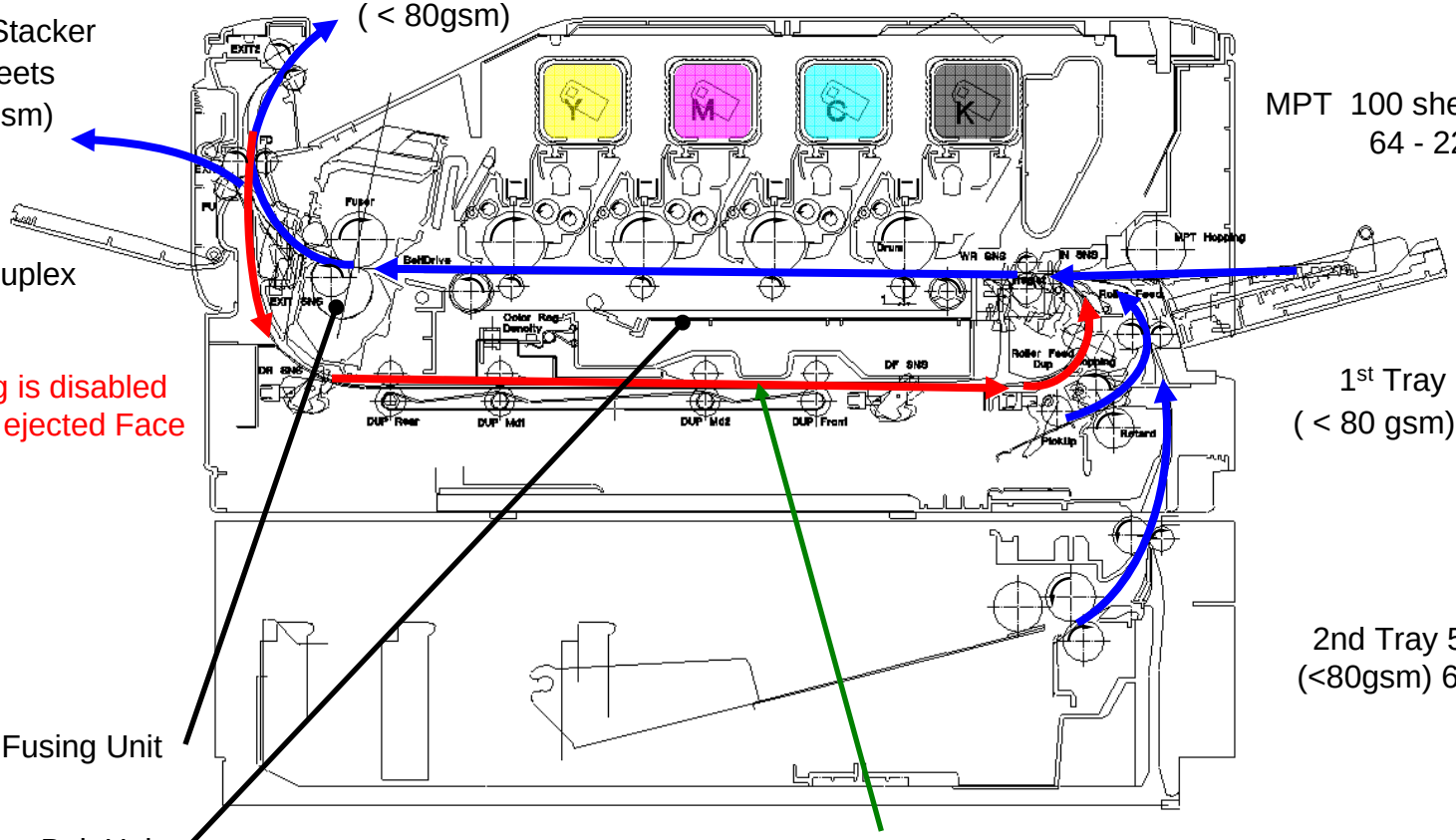
Face Down Stacker
150 sheets
(< 80gsm)
Unified Drum Unit
Face Up Stacker
100 sheets
(< 80gsm)
MPT 100 sheets (<80gsm)
64 - 220gsm
Built-in Auto Duplex
(standard)
Duplex printing is disabled when paper is ejected Face Up
1st Tray 250 sheets
(< 80 gsm) 64 – 176 gsm
2nd Tray 530 sheets
(<80gsm) 64 - 176gsm
Fusing Unit
Belt Unit
Paper jammed along the duplex transport path can be removed from the front side by removing the Drum and the Transfer Belt

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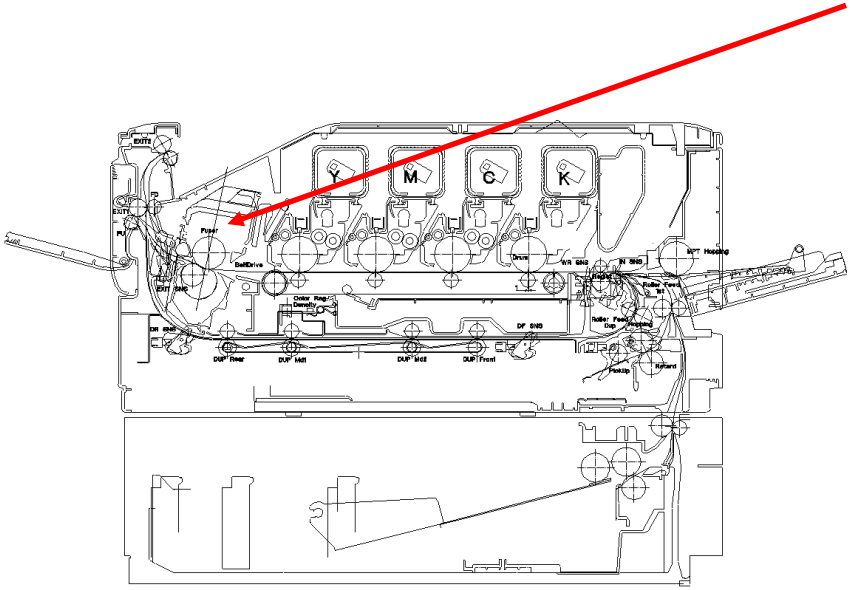
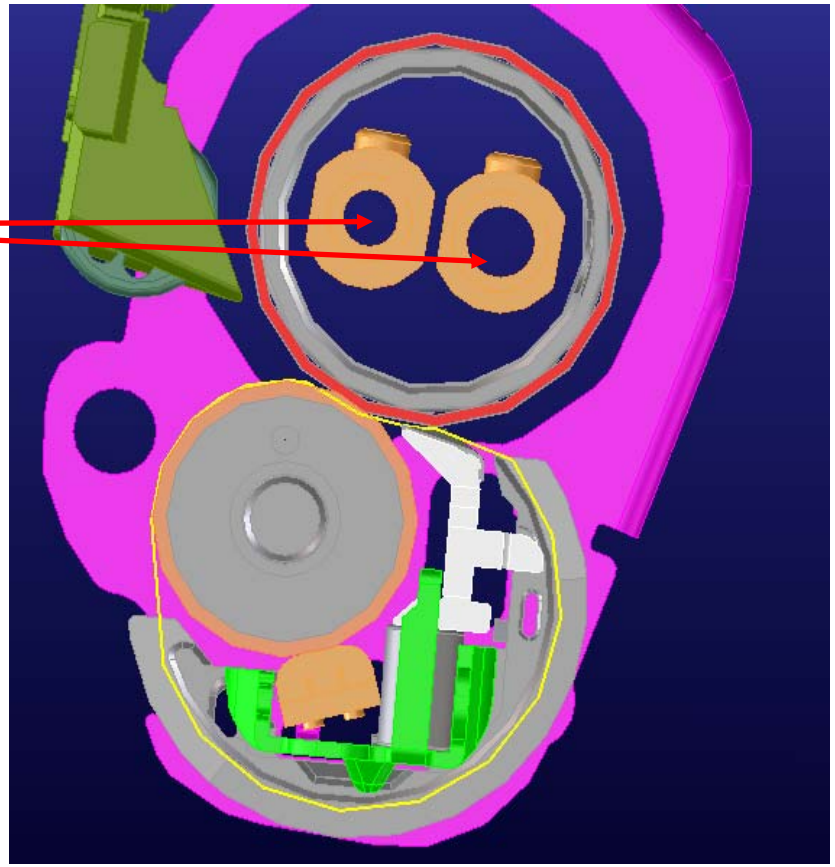
Hardware Basic 17/36

Fuser Unit

2 Halogen Lamps





Halogen Lamps are not available as service parts. If either is defective, need to replace whole fuser unit.

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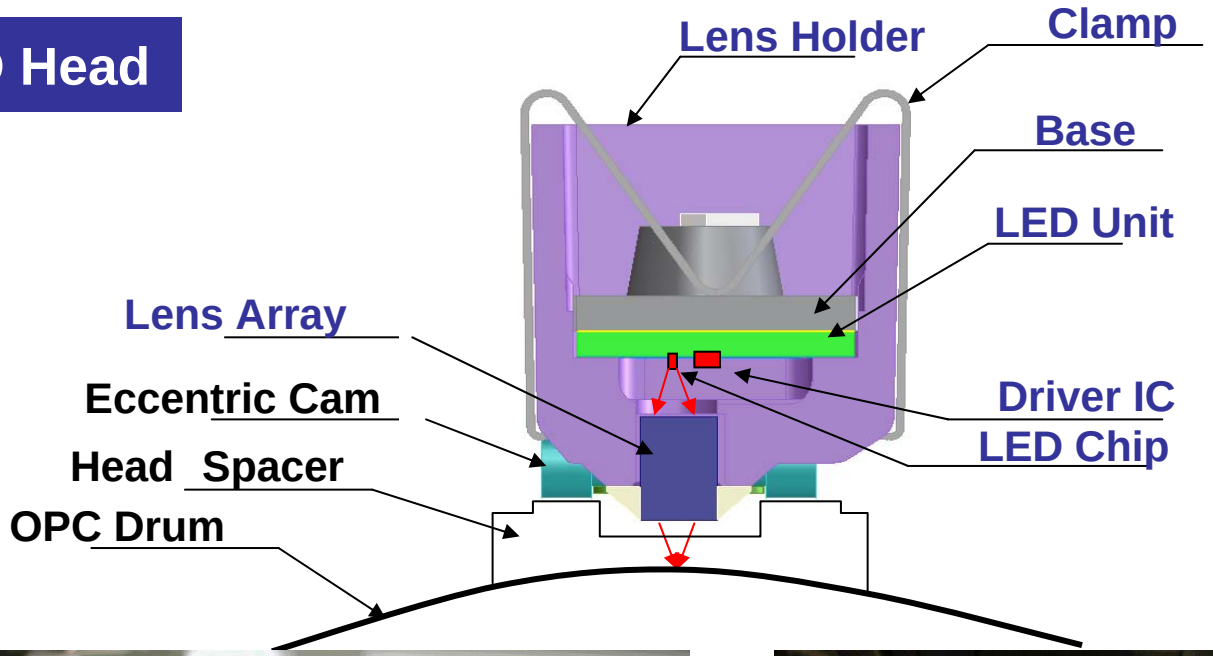
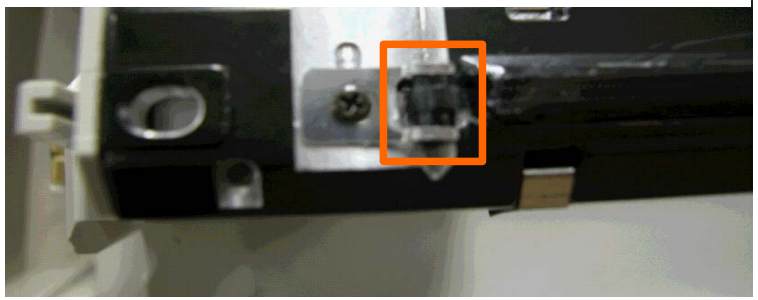
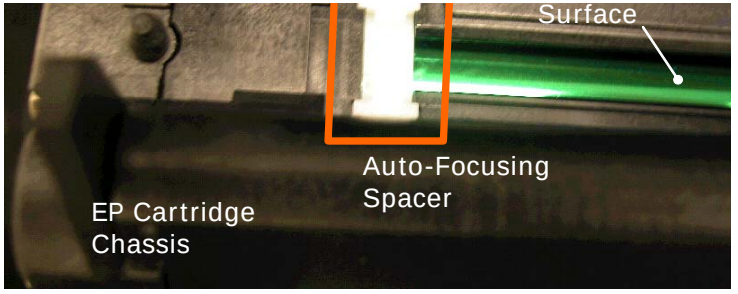
LED Head



Eccentric Cam **to adjust** clearance between OPC Drum and Lens

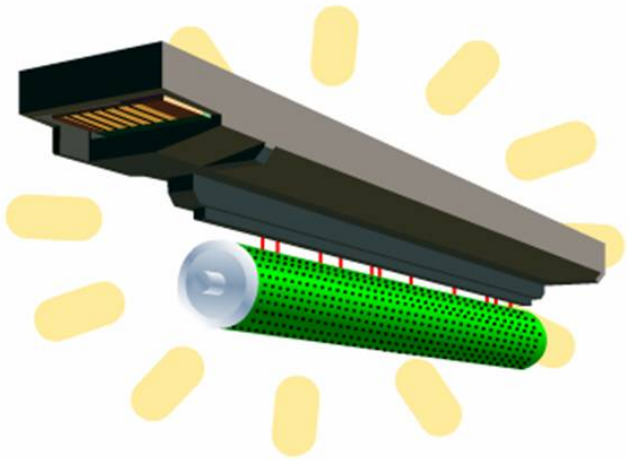


Head Spacer **to keep** clearance between OPC Drum and Lens



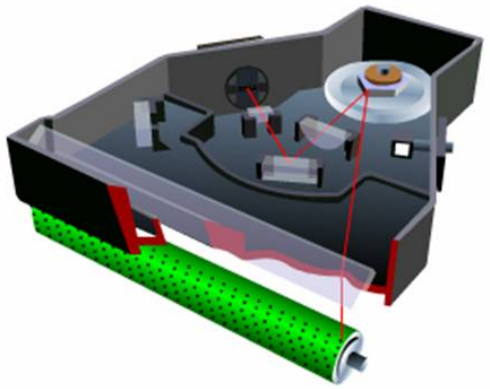
Hardware Basic 19/36

LED vs. Laser



LED Print Head

Show SINGLE Step



Laser Print Head

Show SEVEN Steps

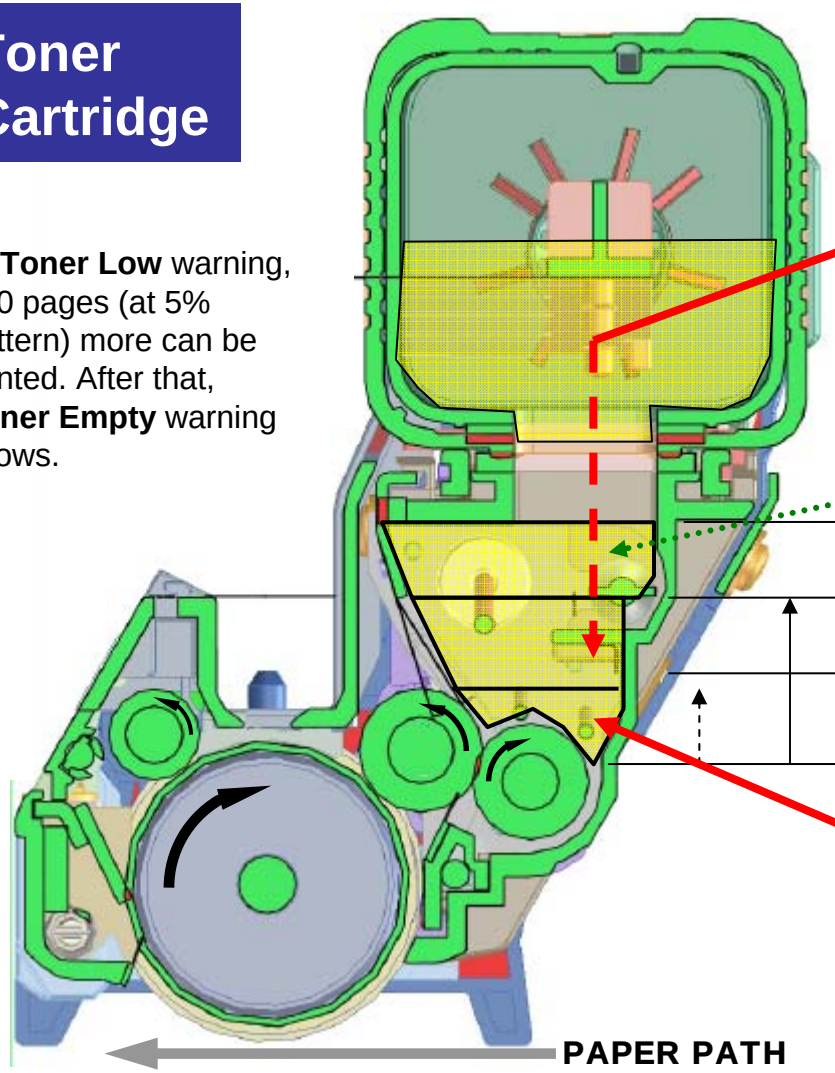
LED Advantages:

Features:	Benefits:
• No Moving Parts	• Low Failure Rate
• No Mirrors	• Direct Optical Path
• Multiple Light Sources	• Increased Reliability

Hardware Basic 20/36

Toner Cartridge

At **Toner Low** warning, 200 pages (at 5% pattern) more can be printed. After that, **Toner Empty** warning shows.



Approximately 30g of toner drops from a toner cartridge when installed on a new drum.

C = 2,200 pages
M = 1,600 pages
Y = 1,900 pages
K = 1,800 pages

1.1K – 1.5K Toner remains here when ID reaches life at approx 20k copies

10g of toner is shipped in consumable drum here

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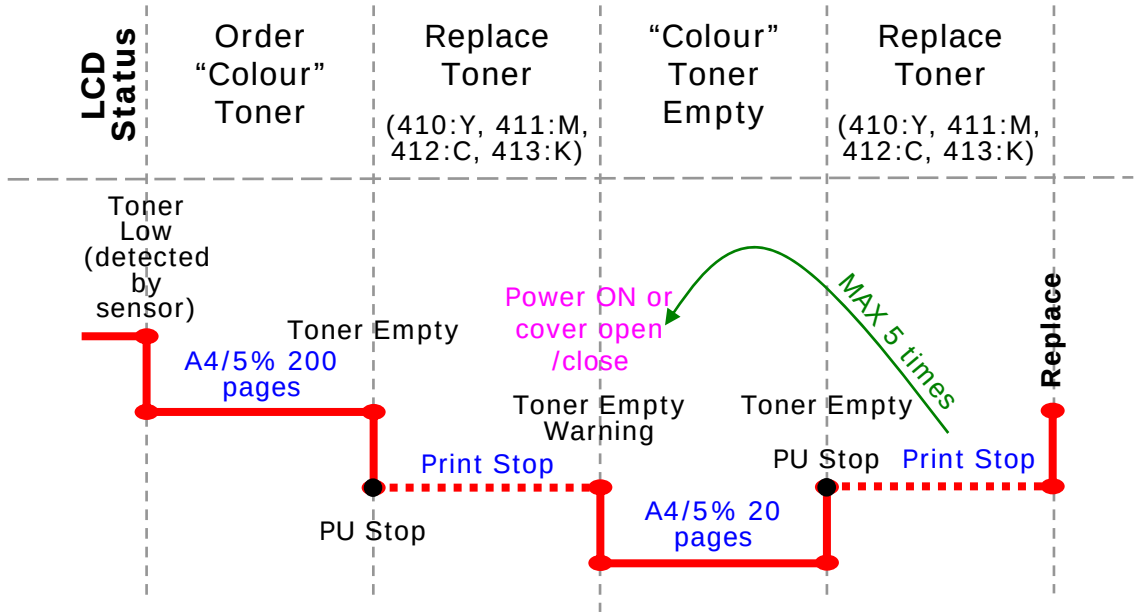
Hardware Basic 21/36

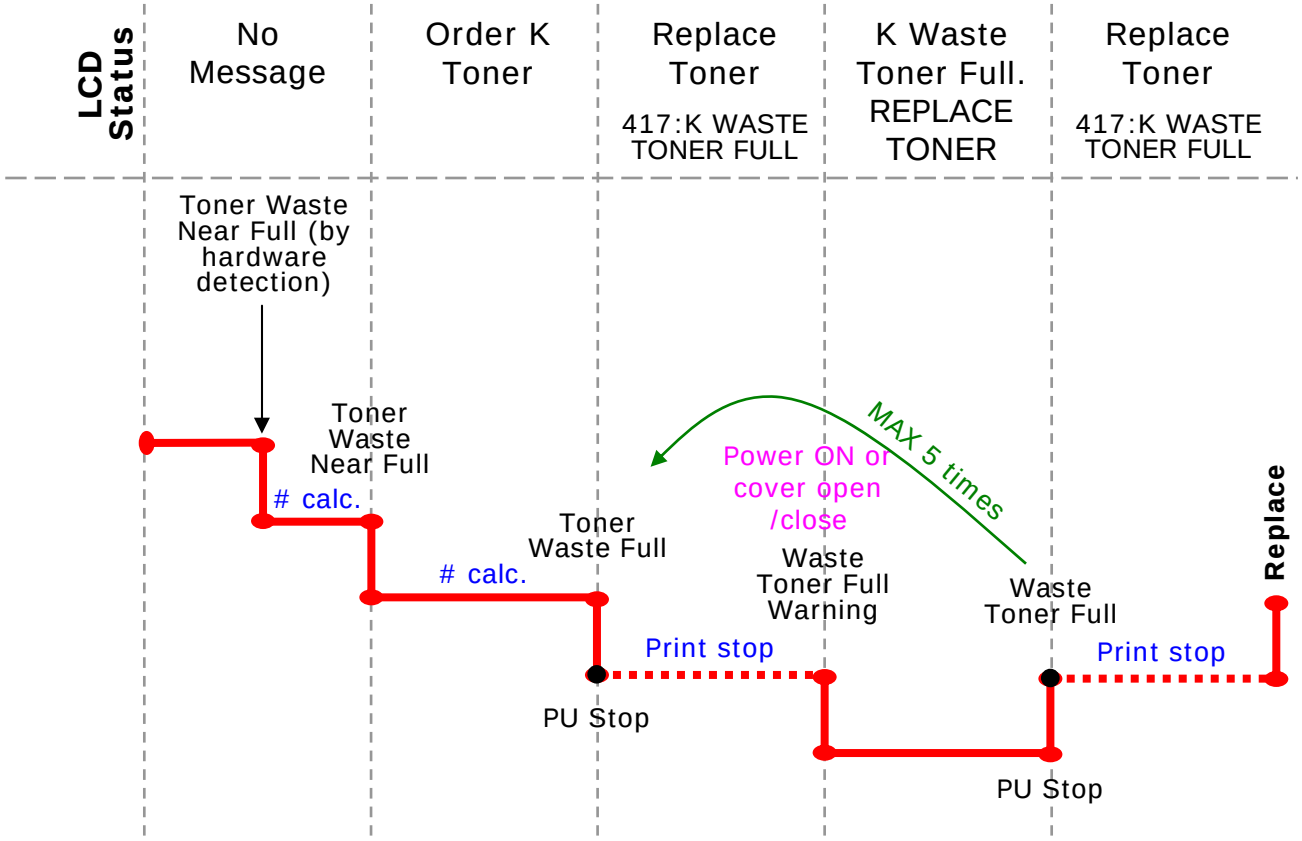
Toner Cartridge warning message

- Starter : 1k (CMYK)
- Supplies : 2k (CMY), 3.5k (K)



Hardware Basic 22/36

Waste Toner box in K Toner Cartridge warning message



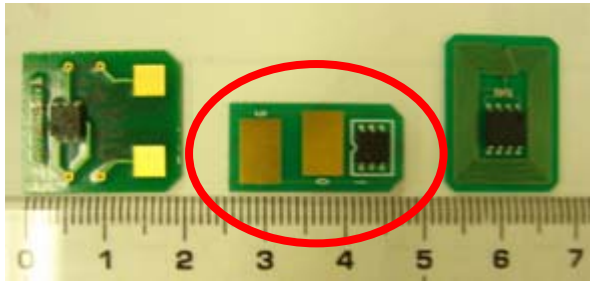
After waste toner sensor detects waste toner box NEAR full, there is no other sensor to detect waste toner box FULL.

So printer will use a calculation (eg. 5% coverage printing waste) to determine waste toner box FULL situation and sends an alert message.

Hardware Basic 23/36

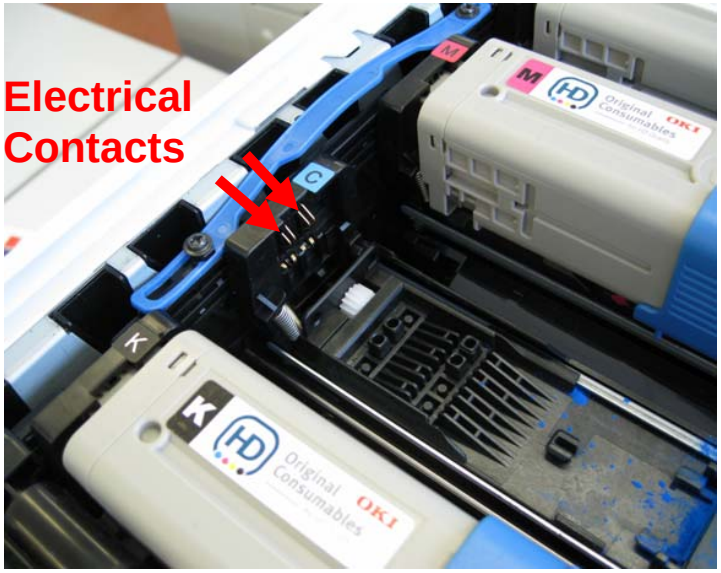
TAGS

- A TAG is like the IC chip.
- Wired TAG is installed all four colours of consumables.
- Only consumable toner cartridges have TAG. Starter toner cartridges do not.



size of Tag

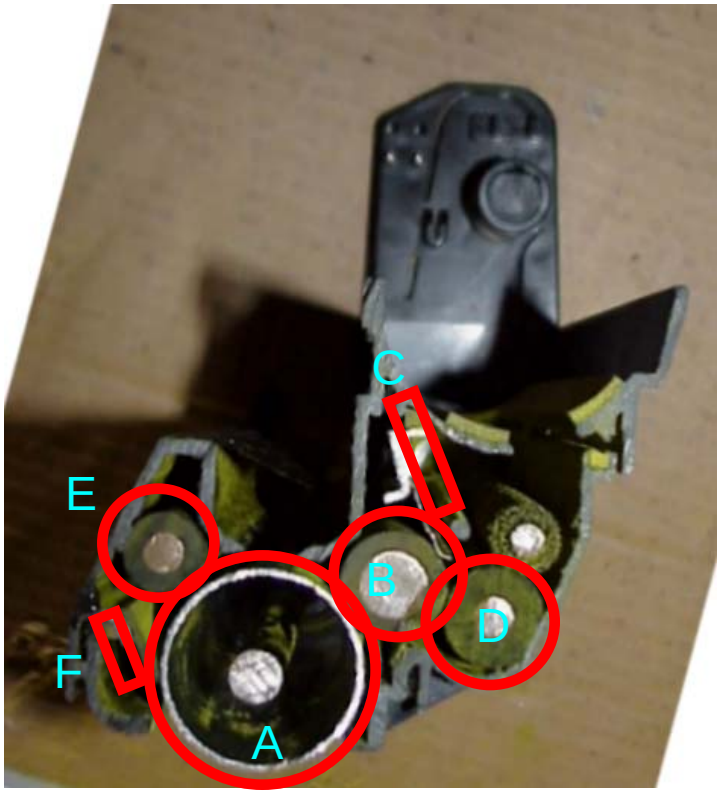
Tag fitted in Toner Cartridge



Electrical Contacts for Tag

Hardware Basic 24/36

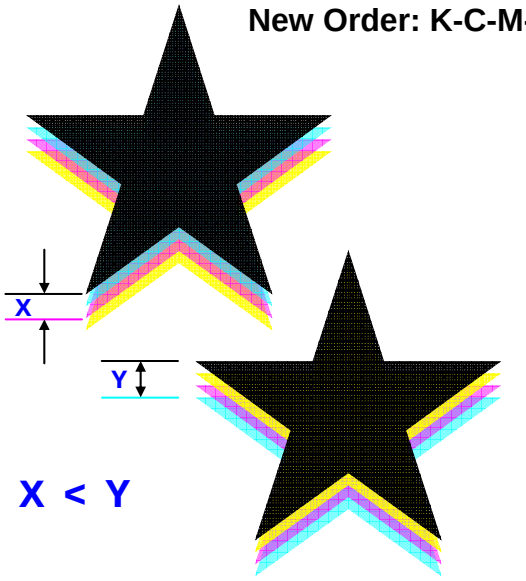
Image Drum (ID) unit

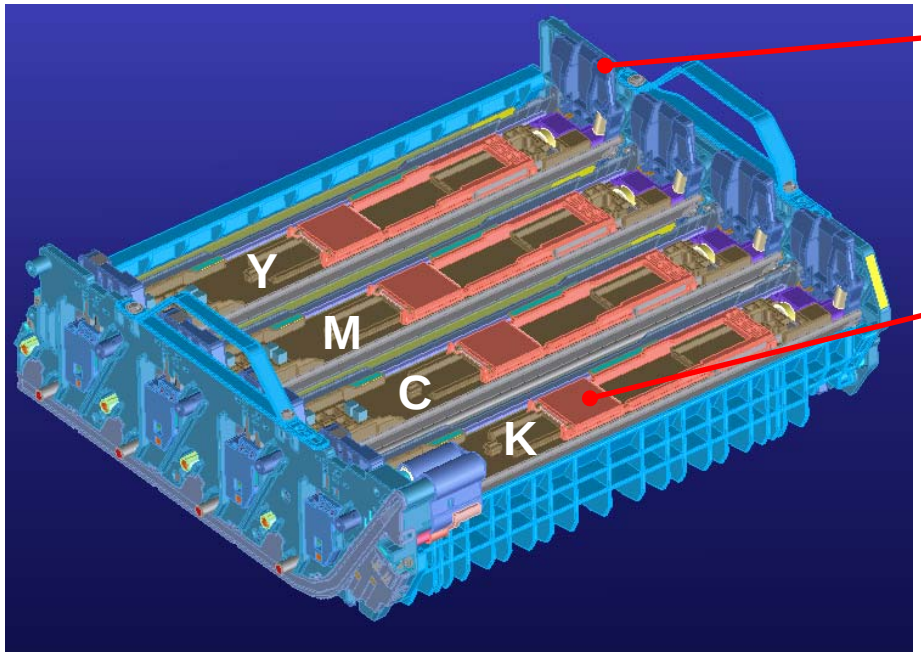


A	Optical Drum
B	Developing Roller
C	Developing Blade
D	Sponge Roller
E	Charge Roller
F	Cleaning Blade

Hardware Basic 25/36

- Unified “basket-type” system for Image Drums
- Position of toner cartridges is ordered as ***K-C-M-Y*** instead of ***K-Y-M-C***
- This improves colour misalignment by increasing distance between Y & K, and bringing C & K closer.

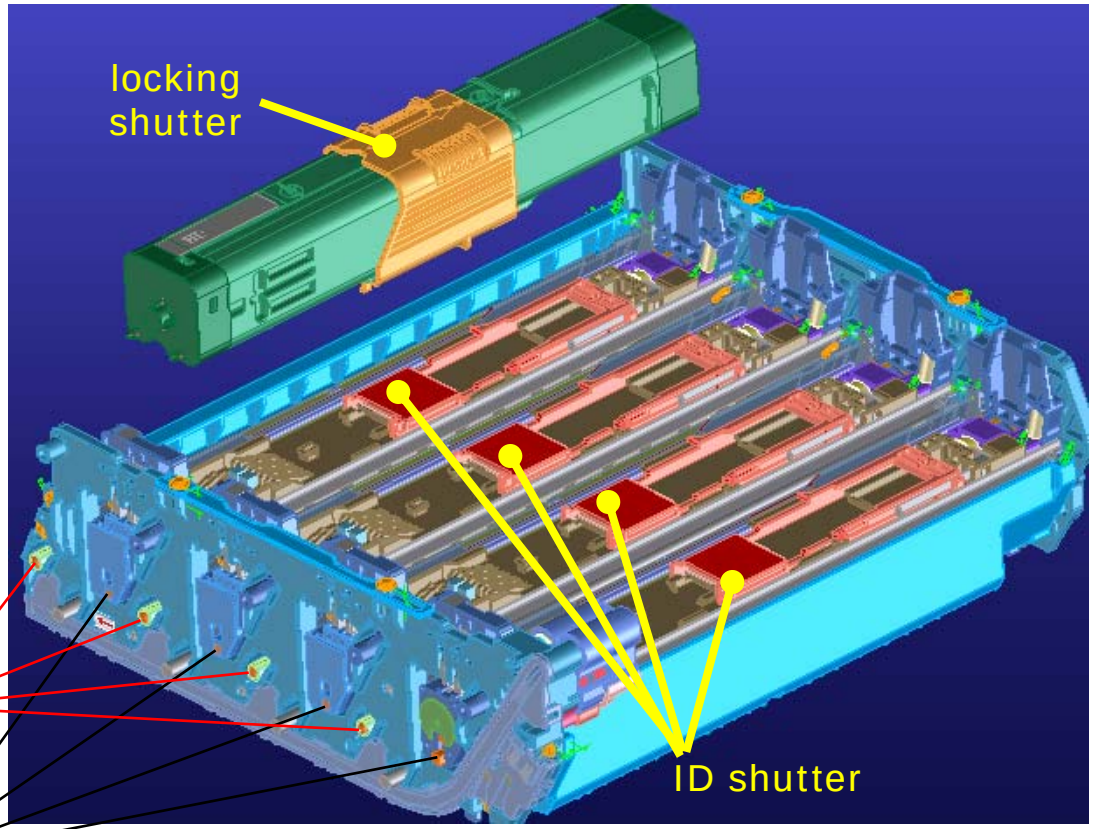




Hardware Basic 26/36

Blanking LEDs

- mounted in the printer chassis.
- used to “reset” surface of ID before it is recharged by the Charge Roller.
- to prevent ghosting.
- LEDs are only ON when IDs are rotating.



tubular light guide (for guiding light from blanking LEDs in printer chassis)

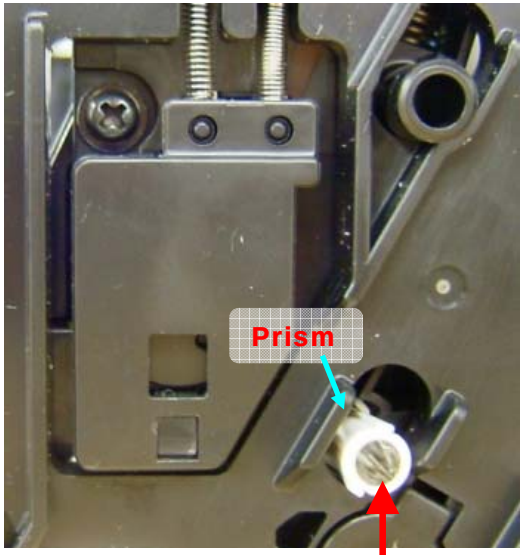
prismatic light guides (for sensing toner levels)

Hardware Basic 27/36

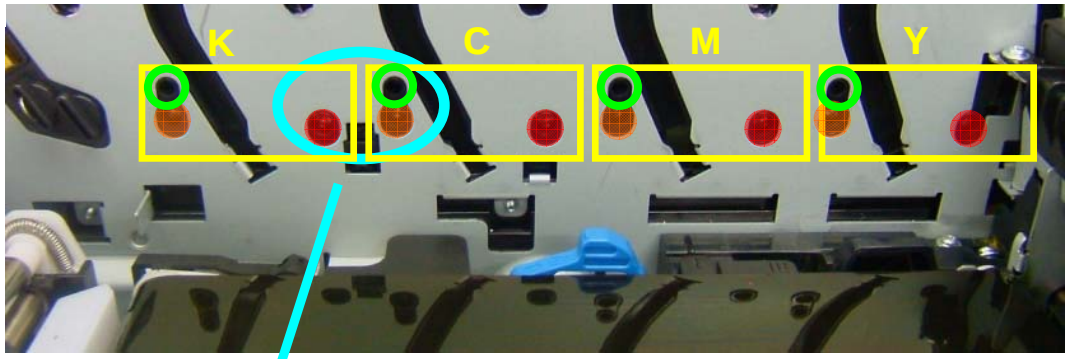
Blanking LEDs

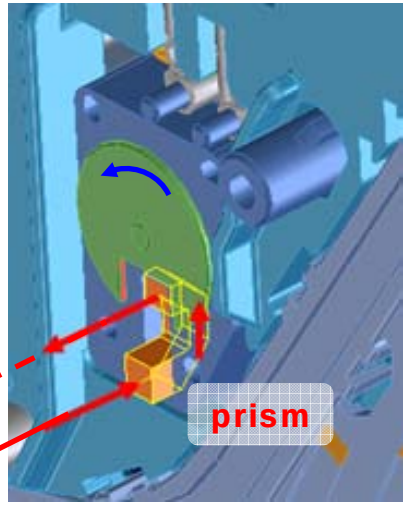
Refresh Light
Toner Low Detection (OUT)
Toner Low Detection (IN)

Image Drum Unit (Left hand Side)



Printer (Left Hand Side)





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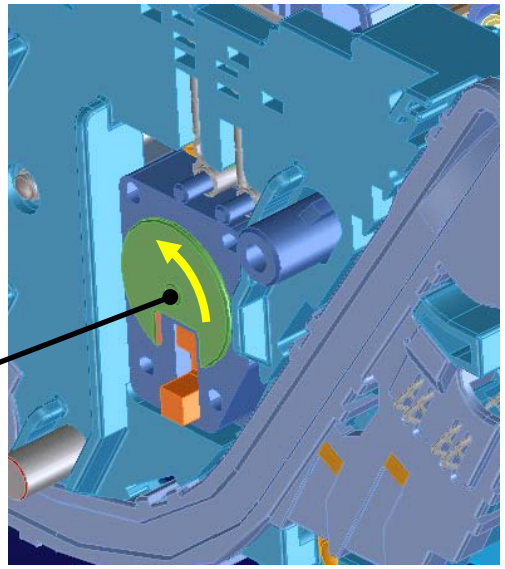
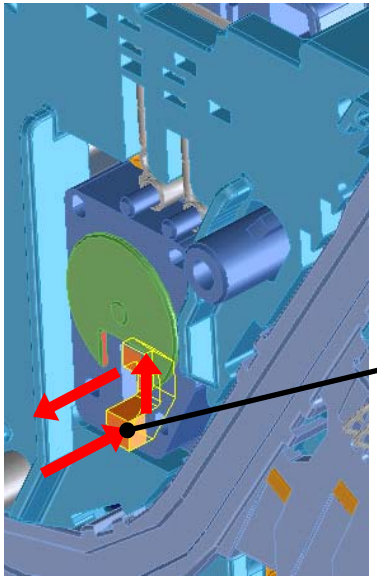
Hardware Basic 28/36

Toner level sensing

rotating plastic shutter (for sensing toner level)



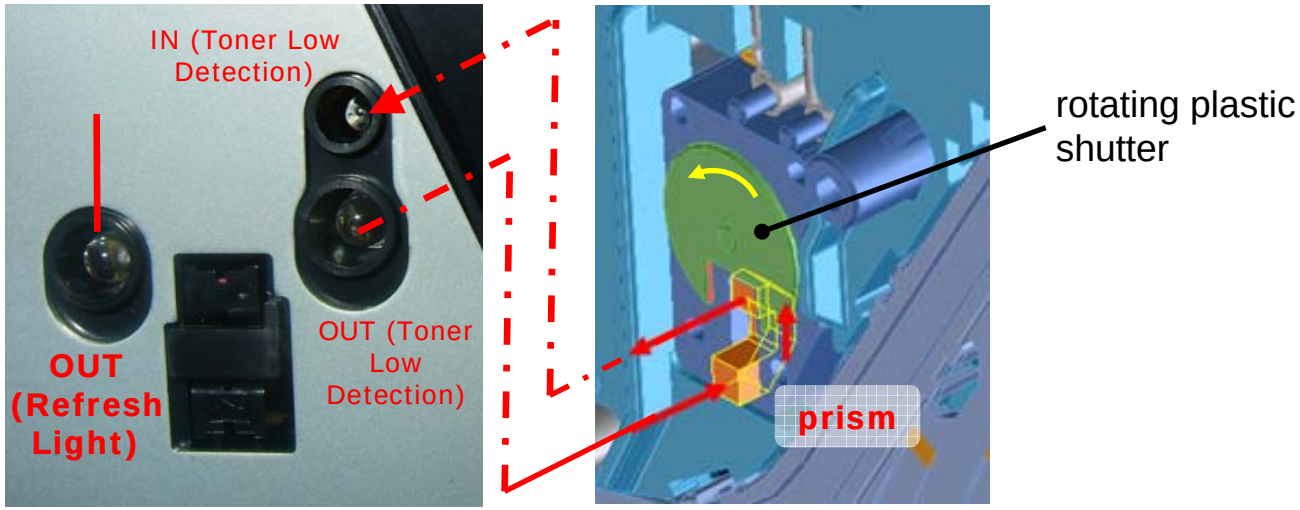


prismatic light guide (for sensing toner level)

- A toner sensor is mounted inside the printer unit which is part of the chassis.
- Toner low is detected by a sensor which monitors the on/off timing of the light exiting the prismatic light guide. This light emits from the chassis of the printer unit and passes through the prismatic light guide inside the ID.

Hardware Basic 29/36

Toner level sensing



- The rotational behaviour of the plastic shutter, mounted inside the ID assembly, depends on the amount of toner in the ID.

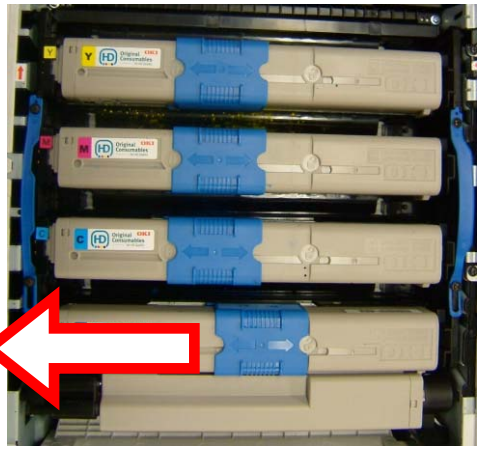
- As shutter turns, it obstructs light leaving the prism.

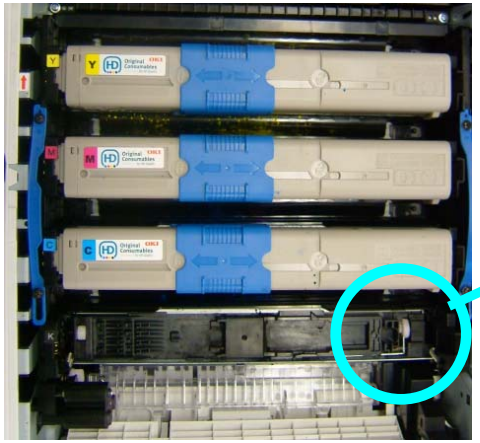
- The faster the shutter rotates means toner is getting low. If shutter rotates slowly, it means there is still toner in the cartridge.

Hardware Basic 30/36

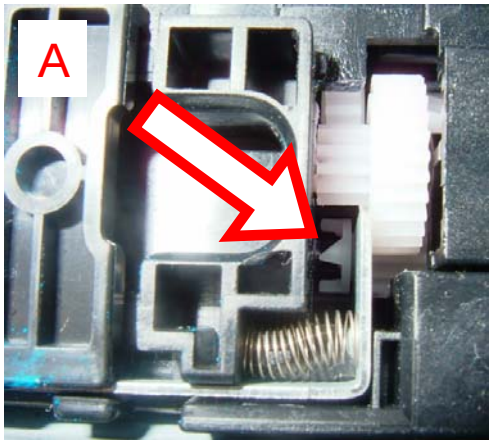
Toner level sensing

1. Slide the lock lever to the Lock position.

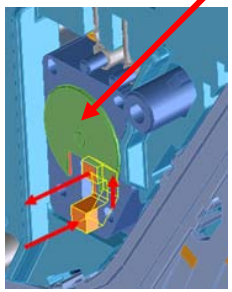


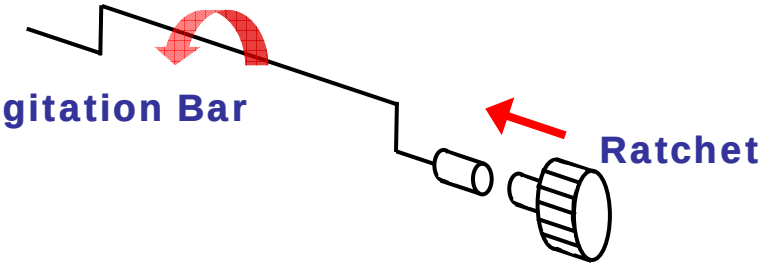


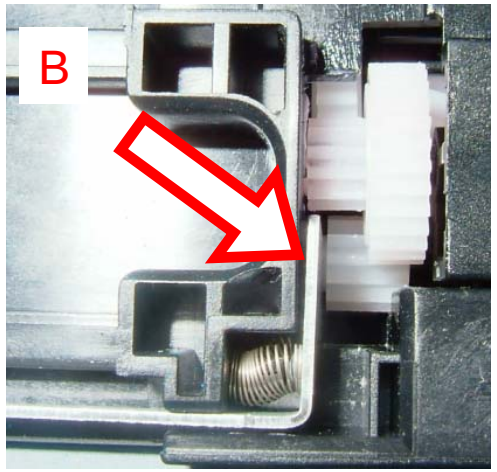
2. The ratchet slides from A to B position.



3. At position B, the ratchet connects to the agitation bar which rotates the **toner sensor plastic shutter**.







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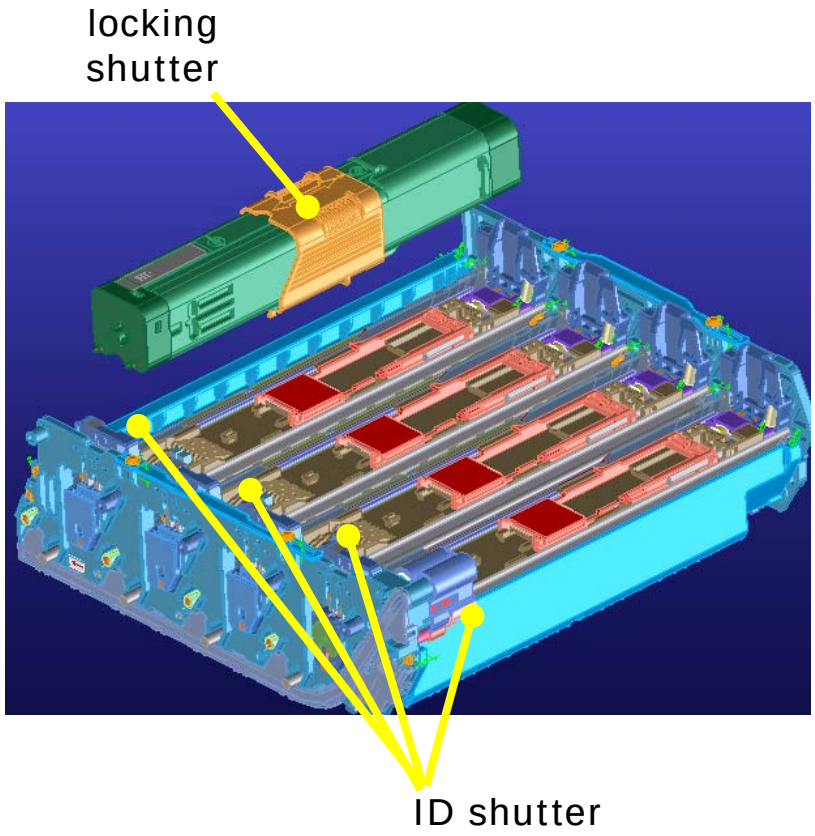
Hardware Basic 31/36

- Each ID has a ID shutter for each of the toner colours.
- These shutters are used together with the toner cartridge shutters to detect whether toner cartridges have been mounted correctly. The check is completed by the toner sensor in the printer chassis.

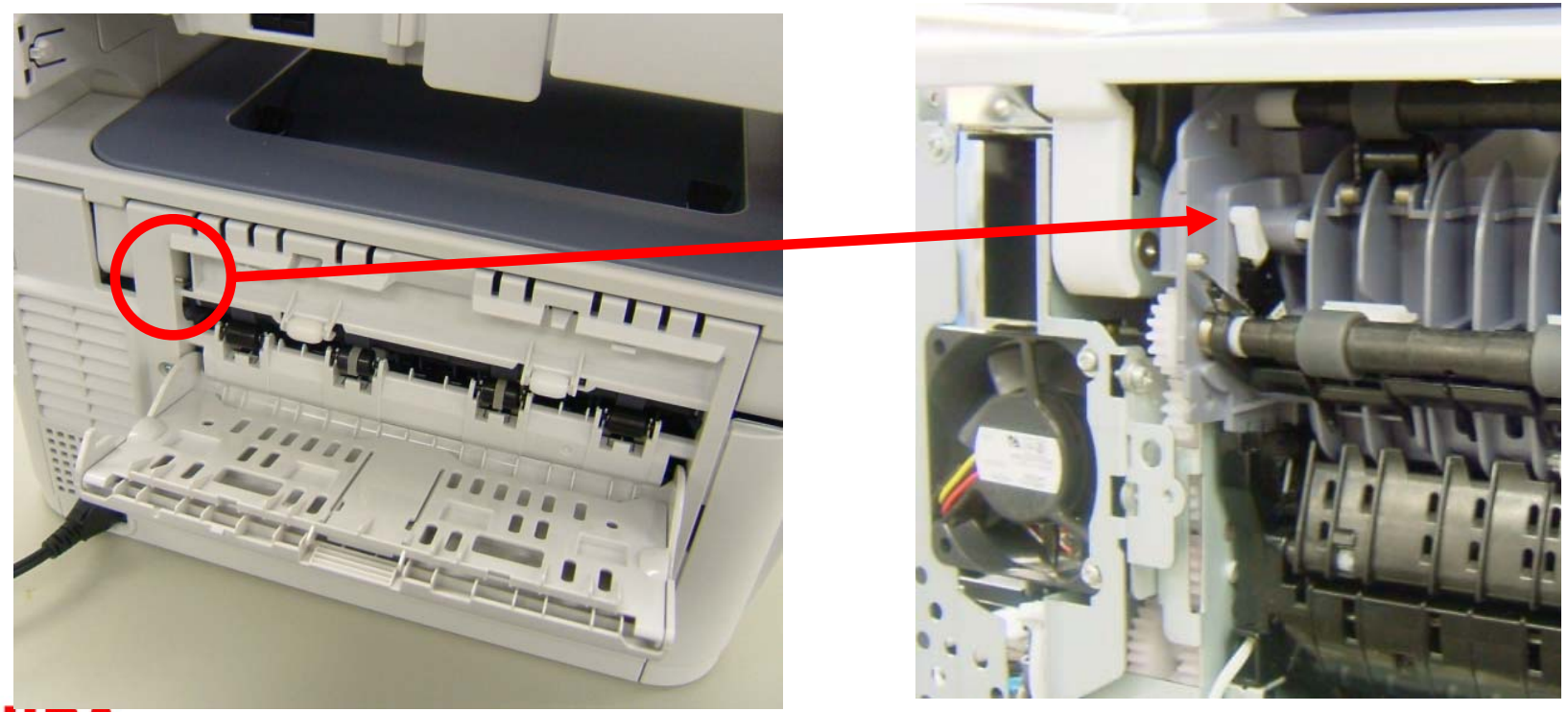
- Following conditions may cause a toner sensor error.
  - toner sensor is dirty (from a toner spill)
  - prismatic light guide is dirty (from toner spill)
  - ID unit is not correctly seated
  - ID unit and the toner sensor are not aligned



Hardware Basic 32/36

Duplex Printing

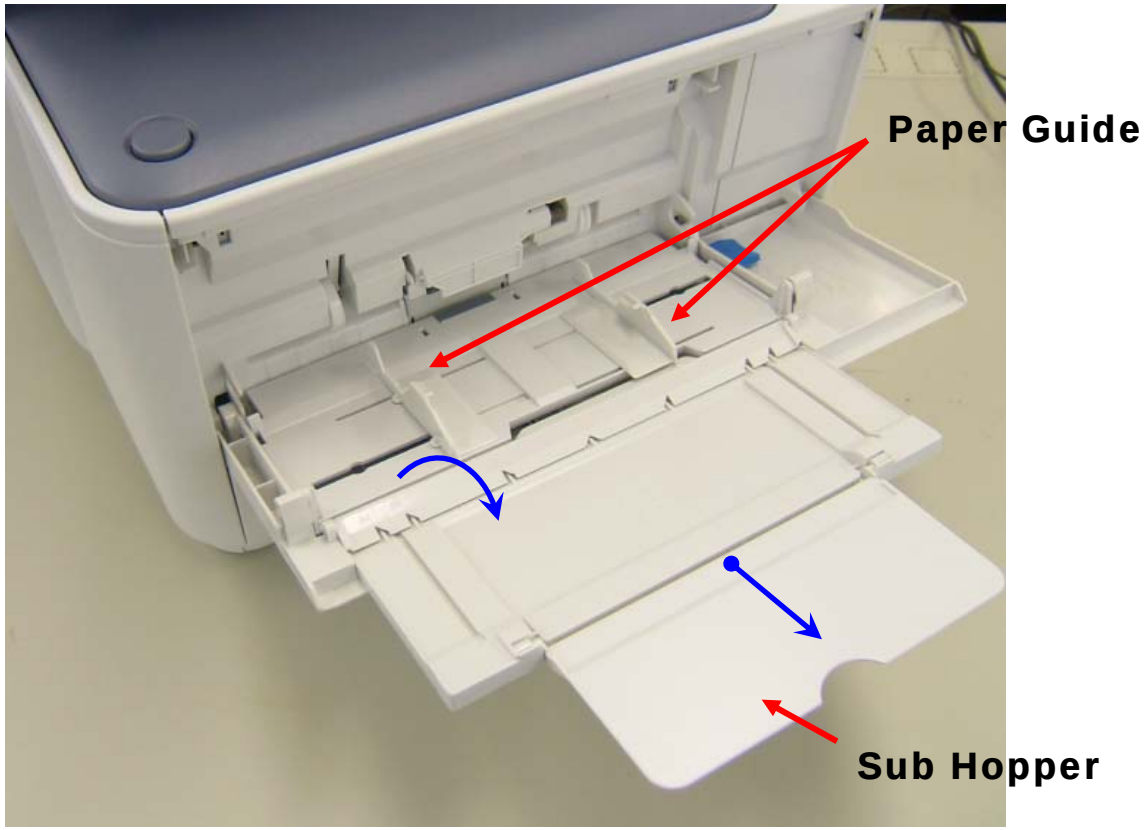
When the Face Up stacker is down (at open position), duplex print job **is not possible**.
LCD shows Error Message. Error 581 CLOSE STACKER COVER
Once the Face Up stacker is closed, duplex job can continue automatically.



Hardware Basic 33/36

Multi Purpose Tray

MPT can accommodate max 100 sheets. Is a standard feature.
Sub Hopper can be pulled out horizontally.
MPT can be closed without sliding the paper guides.



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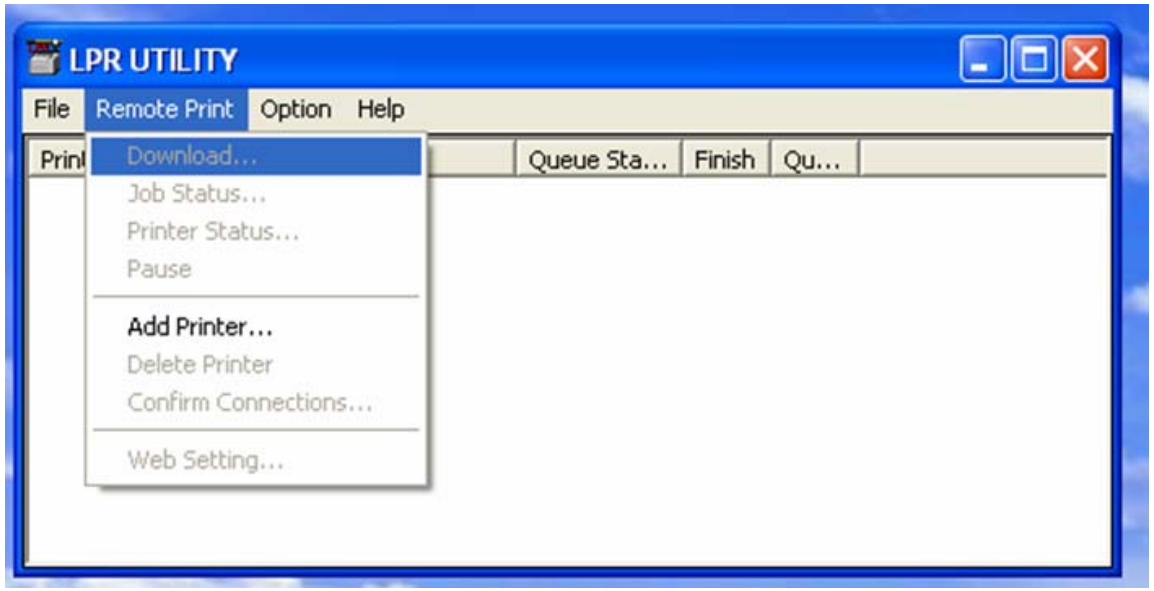
Hardware Basic 34/36

Firmware download

Use LPR Utility to download the firmware into MFP.

This utility is included in the CD co-packed with MFP.

During firmware downloading to machine, do not power off the machine. Otherwise, PU-CU board will be damaged.



Hardware Basic 35/36

Configuration page

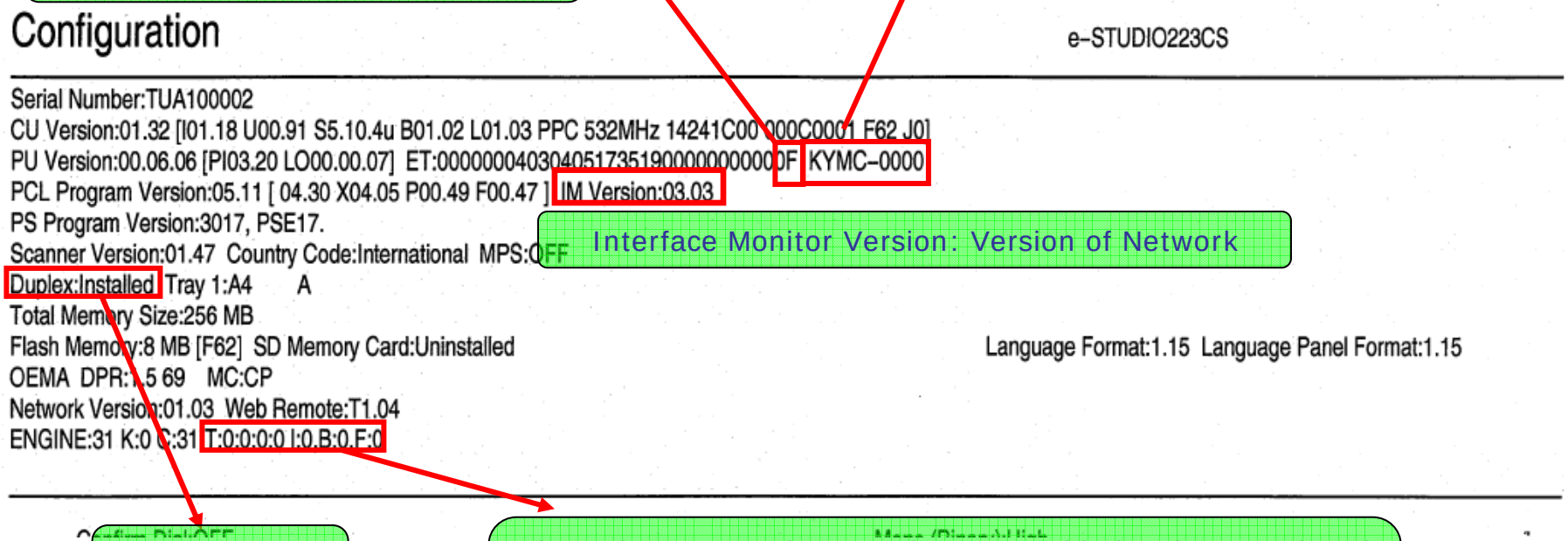
sequence of colours
KYMC-0000

0F

STC or NTC mode (Printer)
0 = NTC
F = STC

STC Capacity
0 = 1K type

STC or NTC mounted on Image Drum
0 = STC
1 = NTC


Configuration
e-STUDIO223CS
Serial Number:TUA100002
CU Version:01.32 [I01.18 U00.91 S5.10.4u B01.02 L01.03 PPC 532MHz 14241C00 000C0001 F62 J0]
PU Version:00.06.06 [PI03.20 LO00.00.07] ET:0000000403040517351900000000000F KYMC-0000
PCL Program Version:05.11 [04.30 X04.05 P00.49 F00.47] IM Version:03.03
PS Program Version:3017, PSE17.
Scanner Version:01.47 Country Code:International MPS:OFF
Duplex:Installed Tray 1:A4 A
Total Memory Size:256 MB
Flash Memory:8 MB [F62] SD Memory Card:Uninstalled
Language Format:1.15 Language Panel Format:1.15
OEMA DPR: 5 69 MC:CP
Network Version:01.03 Web Remote:T1.04
ENGINE:31 K:0 C:31 T:0:0:0:0 I:0.B:0.F:0

Interface Monitor Version: Version of Network

Must always be “installed”

Shows how many times each consumable has been replaced

Toner:0:0:0:0, Image Drum:0, Belt:0, Fuser:0
K:Y:M:C

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Hardware Basic 36/36

On the configuration page, there are
1) "STC or NTC mode (Printer)" and
2) "STC or NTC mounted on Image Drum"

STC: Starter Toner Cartridge
NTC: Normal Toner Cartridge

"STC or NTC mode (Printer)" shows in which toner cartridge mode a device (printer) is.
"0" = device is currently in the normal cartridge mode, where an error occurs if a cartridge without a tag is installed.
0 will be displayed when ALL 4 toner cartridges are normal cartridges.
"F" = device is currently in the starter cartridge mode, where an error doesn't occur even if a cartridge without a tag is installed. This is the mode at the time of shipment.
F will be displayed when at least one of the 4 toner cartridges is a starter toner cartridge,

"STC or NTC mounted on Image Drum" shows the type of toner cartridge installed in the current Image Drum unit.
"0" = a starter toner cartridge (a cartridge without a tag) is installed.
"1" = a normal toner cartridge (a cartridge with a tag) is installed.
Example:
"KYMC – 0000" means all KYMC are starter toner cartridges.
"KYMC – 0100" means K, M and C are starter toner cartridges. Y is normal toner cartridge.

IV. For Service Man Use

For Service Man Use 1/5

- How to start Maintenance Menu
- What is Self Diagnostic Mode
- How to start Fax Service Bit

For Service Man Use 2/5

How to start Maintenance Menu

To start Maintenance Menu,

1. Press > 0 > 1 > 0 > 3 >
2. Input Password

   The default password is “000000”.

Please refer **Service Manual section 5.1** on the service codes in this menu.

Important: 000000 is default and can be changed. If this password is lost or forgotten, it is **NOT** recoverable. The only way is to change the PU-CU board.

For Service Man Use 3/5

What is Self Diagnostic Mode

- Self Diagnostic Mode is for service man to test operation status of parts such as sensors, fan, motor.
- Use allocated buttons of MFP to navigate in Self Diagnostic Mode.
- Only allocated buttons of MFP are valid in this mode. All other keys are invalid.
- For details on test in this mode, please refer to **Service Manual Section 5.4**.

Buttons of SFP	**Allocated Buttons of MFP**
↑	2
↓	8
Back	4
Enter	6
Online	*
Cancel	#

"Online" means repeat the same test.

For Service Man Use 4/5

Self Diagnostic Mode

- SWITCH SCAN
- MOTOR & CLTCH TEST
  - ID MOTOR
  - BELT MOTOR
  - FUSER_MOTOR
  - REGIST MOTOR
  - T1 HOPPING MOTOR
  - FRONT MOTOR
  - REGIST SHUTTER
  - DUPLEX MOTOR
  - DUPLEX CLUTCH
  - T2 HOPPING MOTOR – Option
  - T2 FEED CLUTCH – Option
  - ID UP/DOWN The top and front cover must be closed
  - LV FAN TEST
  - ID FAN TEST
  - FRONT FAN TEST
- TEST PRINT
- REG ADJUST TSET
- DENS ADJ TEST
- CONSUMABLE STATUS
- PRINTER STATUS
- FACTORY MODE SET
- SENSOR SETTING
- LED HED DATA
- NVRAM PARAMETER

Buttons of SFP	Allocated Buttons of MFP
↑	2
↓	8
Back	4
Enter	6
Online	*
Cancel	#

◆ In Self-Diagnostic Mode, only the allocated buttons are valid. All other keys are invalid.

For Service Man Use 5/5

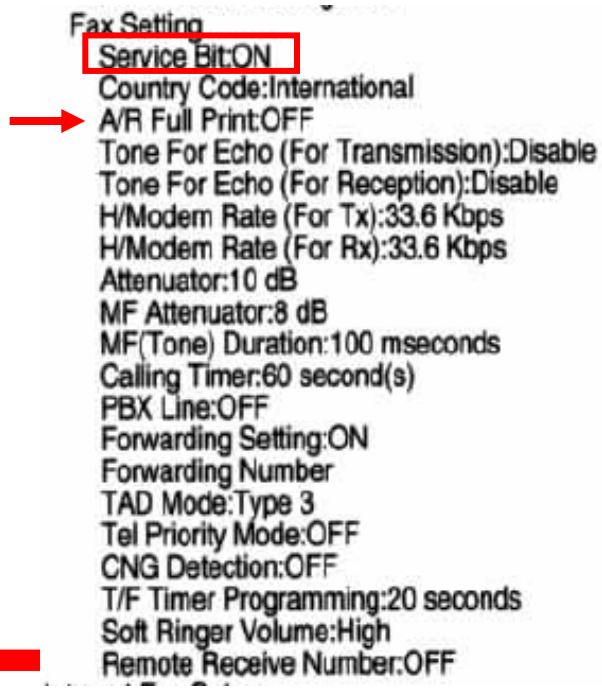
How to start Fax Service Bit

1. Press “Setting” key
2. Press ▼ key till finding out “Admin Setup”
3. Press OK key
4. Enter Password. (default is **aaaaaa**)

aaaaaa is default Admin password. It can be changed by user.

Fax Setup > Fax setting > Service Bit (default is OFF)

Please refer **Service Manual section 5.2** on the service codes in this menu



V. End User Functions

End User Functions 1/10

- How to view System information
- How to view Device information
- How to print Report
- What is “High Humid” mode
- What is Power save and Sleep mode
- What is Silent mode
- What is Eco mode
- What is Mono print

End User Functions 2/10

How to view System Information

1. Press “Setting” key
2. Press ▼ key to find “View Information”
3. Press OK key

System Information
Serial No.
Asset No.
Lot No.
CU Version
PU Version
Scanner Version
Total Memory
Flash Memory
SD Memory Card

Network
IPv4 Address
Subnet Mask
Gateway Address
MAC Address
NIC Program
IPv6 Address
IPv6 Address

End User Functions 3/10

How to view Device Information

1. Press “Status” key
2. Press ▼ key to find “Device Information”
3. Press OK key

Device Information	Job Lists		
	Fax Job		
	Supplies Status	Drum Unit	
		Belt	
		Fuser	
		K Toner(n.nK)	
		C Toner(n.nK)	
		M Toner(n.nK)	
		Y Toner(n.nK)	
	Counter	Print Count	Tray 1
			Tray 2
			MP Tray
		Scan Count	Total Scanned
			Scanned Pages
			Total Scanned Pages (ADF)
			Scanned Pages

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End User Functions 4/10

How to print Report

1 Press the <**SETTING**> key.

2 Make sure [**Reports**] is selected and then press (OK).
If you want to print the [**Menu Map**], follow procedure 4.

3 Press the ▼ to select the category to which the report you want to print belongs and then press (OK).

4 Press ▼ to select the report you want to print and then press (OK).
If the entry screen for the admin password, enter the admin password and select [**Enter**], and then, press (OK).

5 Press the ◄ or ► to select [**Yes**] on the confirmation message and then press (OK).

! Note

- When **[Admin Setup]>[Device Control]>[System Configuration]>[Allow all report printing]** is **[Disable]**, the admin password is required for printing the following reports.
  - Scan To Log
  - Speed Dial List
  - Address Group List
  - Communication Management Report (Fax)
  - Communication Management Report (Email / Internet Fax)
  - Email Address List

End User Functions 5/10

What is “High Humid” mode

Paper curl happens because temperature difference between fuser roller and pressure roller is wide.

By setting “High Humid” to on, MFP warm up time is extended. There is more time for heat from fuser roller to transfer to pressure roller.

The temperature difference between them becomes narrower and copied paper curls less.

End User Functions 6/10

High Humid mode

1. Press “Setting” key
2. Press ▼ key till finding out “Admin Setup”
3. Press OK key
4. Entre Password. (default setting is aaaaaa)
5. Press “User install”
6. Press “High Humid Mode”
7. Change “ON”

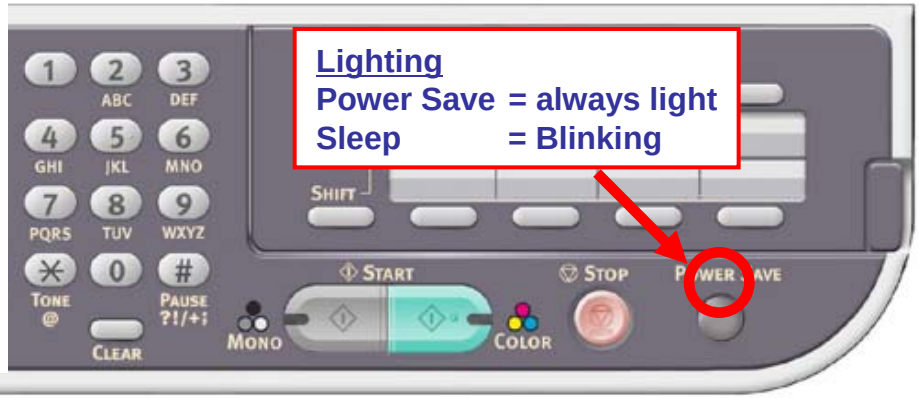
Note

- “High Humid Mode” : the default setting is OFF.
- When “ON” is selected, warming up time could be longer. (20-40sec)

End User Functions 7/10

What is Power Save and Sleep Mode

Power Save	Power Save Time
	Sleep Time
	Silent Mode
	ECO Mode



Power Save Mode and Sleep Mode

The two-phase power saving mode enables you to save the power consumption of the machine.

■ Power Save Mode

When your machine is not used for a certain period of time, it automatically enters a power saving mode to reduce the power consumption.

You can enter the power saving mode manually by pressing the <**POWER SAVE**> key on the operator panel.

■ Sleep Mode

Your machine goes from the power saving mode into the sleep mode after a set period of time. In the sleep mode, the status of your machine is almost the same as when it is turned off.

Power consumption
Power Save = less 20(w)
Sleep = less 1.5(w)

End User Functions 8/10

What is Silent Mode

PowerSave	PowerSave Time
	Sleep Time
	SilentMode
	ECO Mode

When waking up from “Sleep Mode” without the printing process, the printer will not perform initialization.

Note

- The default setting is ON

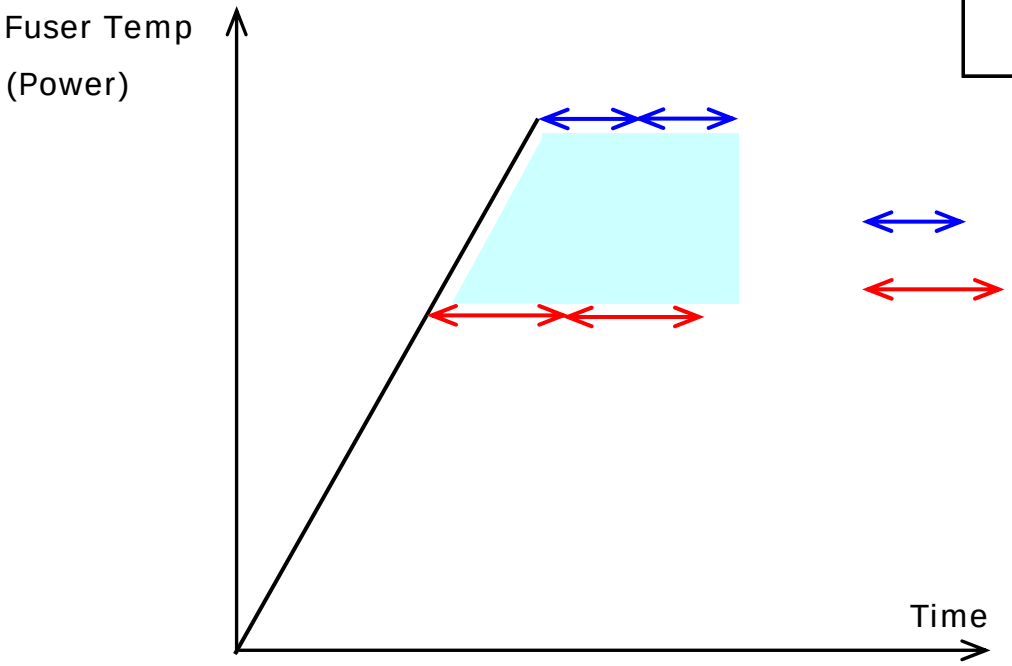
End User Functions 9/10

What is ECO Mode

Print from power save status, and when the print job is 1 or 2 pages.

Shorter printing time and lesser power consumption, especially when printing images.

PowerSave	PowerSave Time
	Sleep Time
	SilentMode
	ECO Mode



Colour printing

Print at 26ppm (Normal)

Print at 16ppm (Eco mode)

Mono printing

Print at 30ppm (Normal)

Print at 16ppm (Eco mode)

Note

- The default setting is ON.

End User Functions 10/10

What is Mono print

Mono print available even if colour toner is life (empty).

This applies only if the data is mono.

VI. Printer Driver

Printer Driver 1/7

Operating System Support

Operating System	Support Level
Windows 3.X	Not Supported
Windows 95	Not Supported
Windows 98	Not Supported
Windows Me	Not Supported
Windows NT 4.0	Not Supported
Windows 2000	**Supported**
Windows XP	**Supported**
Windows XP x64	**Supported**
Windows Server 2003	**Supported**
Windows Server 2003 x64	**Supported**
Windows Vista	**Supported**
Windows Vista x64	**Supported**
Windows 7	**Supported**
Windows 7 x64	**Supported**
Windows Server 2008	**Supported**
Windows Server 2008 x64	**Supported**
Windows Server 2008 R2	**Supported**
Mac OS 8.x / 9.x	Not Supported
Mac OS X	**Supported 10.3.9 -> 10.6.4**

Printer Driver 2/7

This product supports the following drivers;

✓ : Supported

Driver	eS223CS
PCL5c (Windows)	✓
PCL6c (Windows)	✓
PostScript (Windows)	✓
FAX (Windows)	✓
XPS-PCL (Vista/7 only)	✓
Scanner (Windows)	✓
PostScript (Mac OS X)	✓
Scanner (Mac OS X)	✓

Printer Driver 3/7

Microsoft (WHQL) driver certification

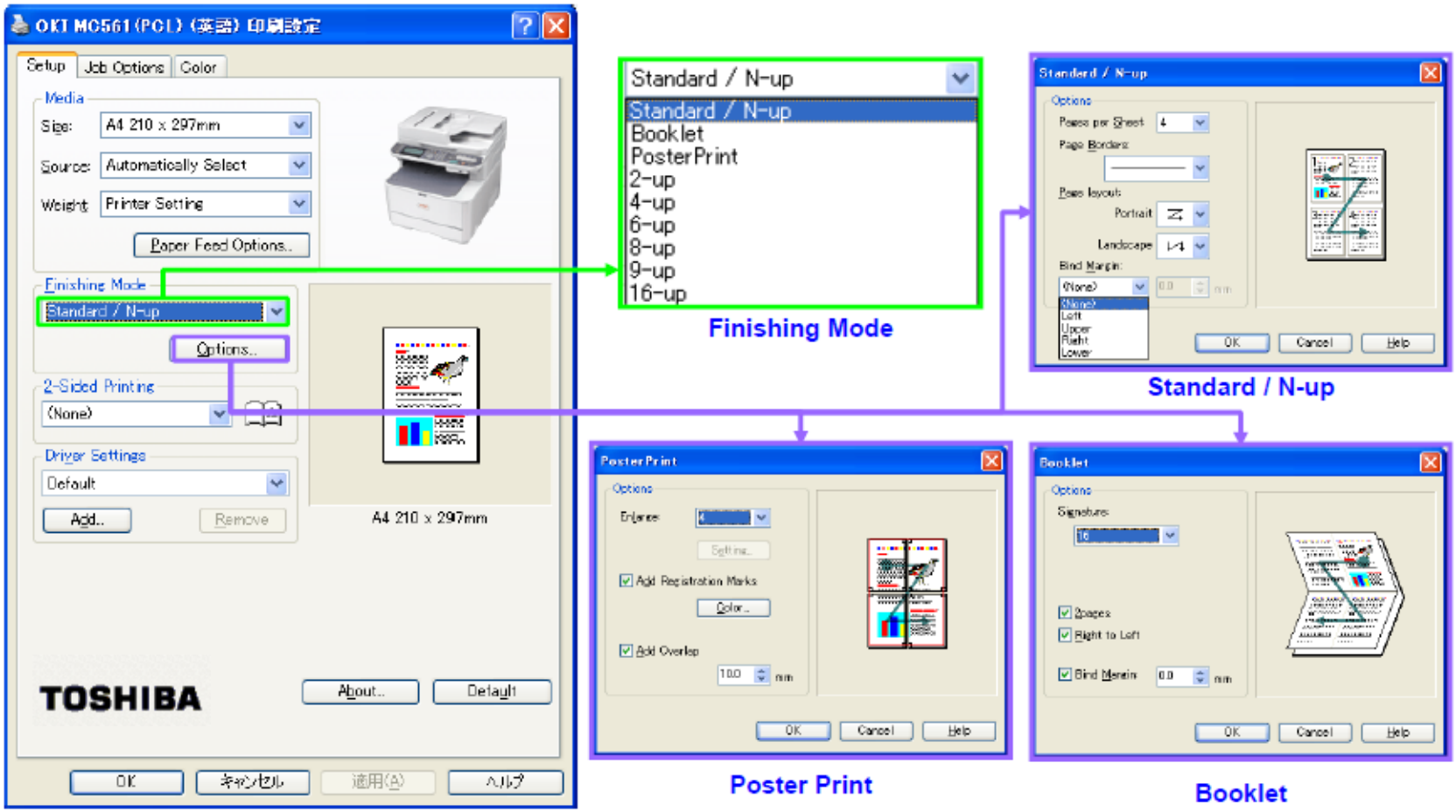
Printer drivers are Microsoft-certified for the following operating systems:

- Windows XP
- Windows 7

The drivers **will** install correctly as certified drivers on other versions of Windows such as Vista and customers won't see an unsigned driver warning.

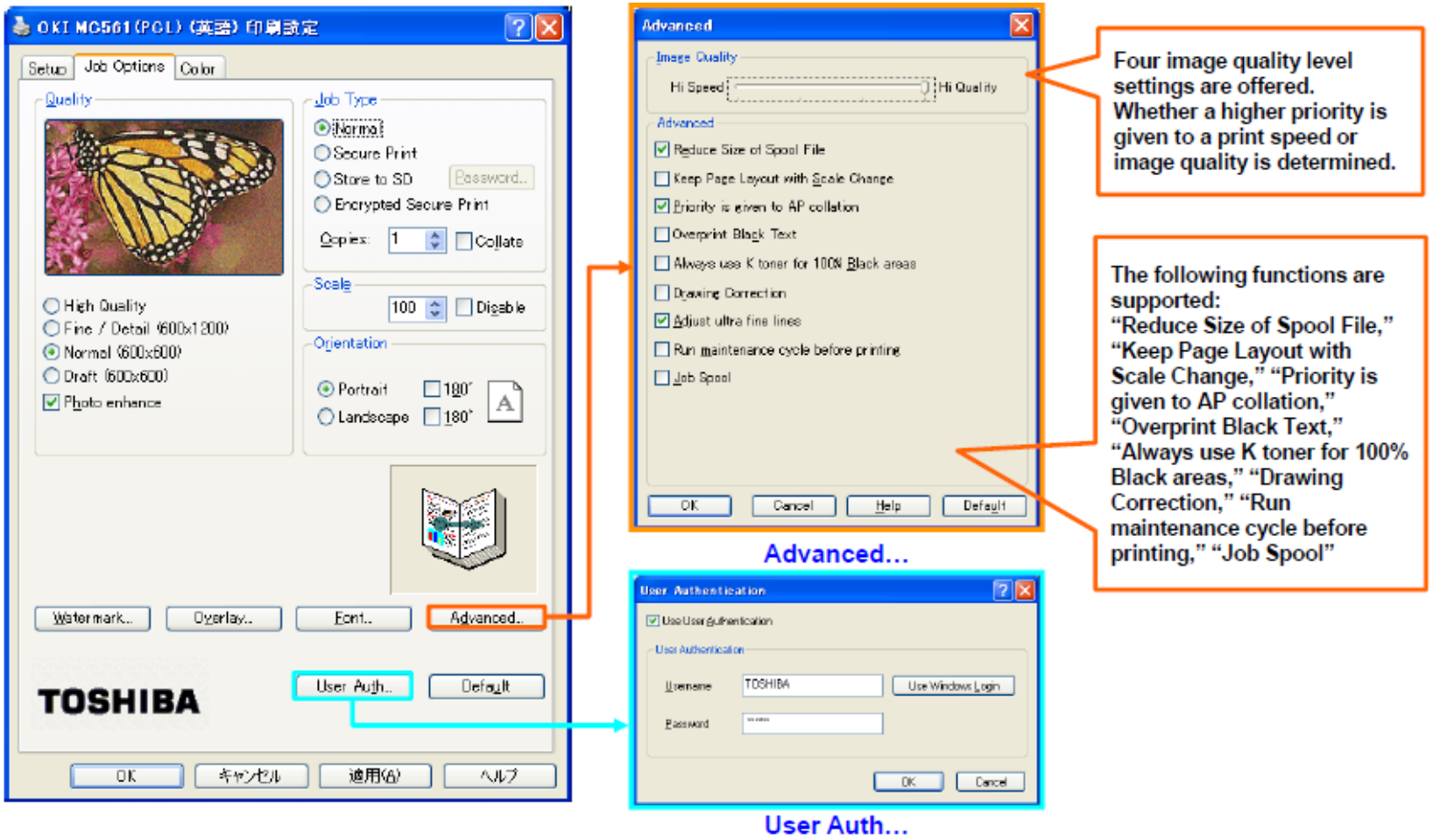
Printer Driver 4/7

Printer Driver Features



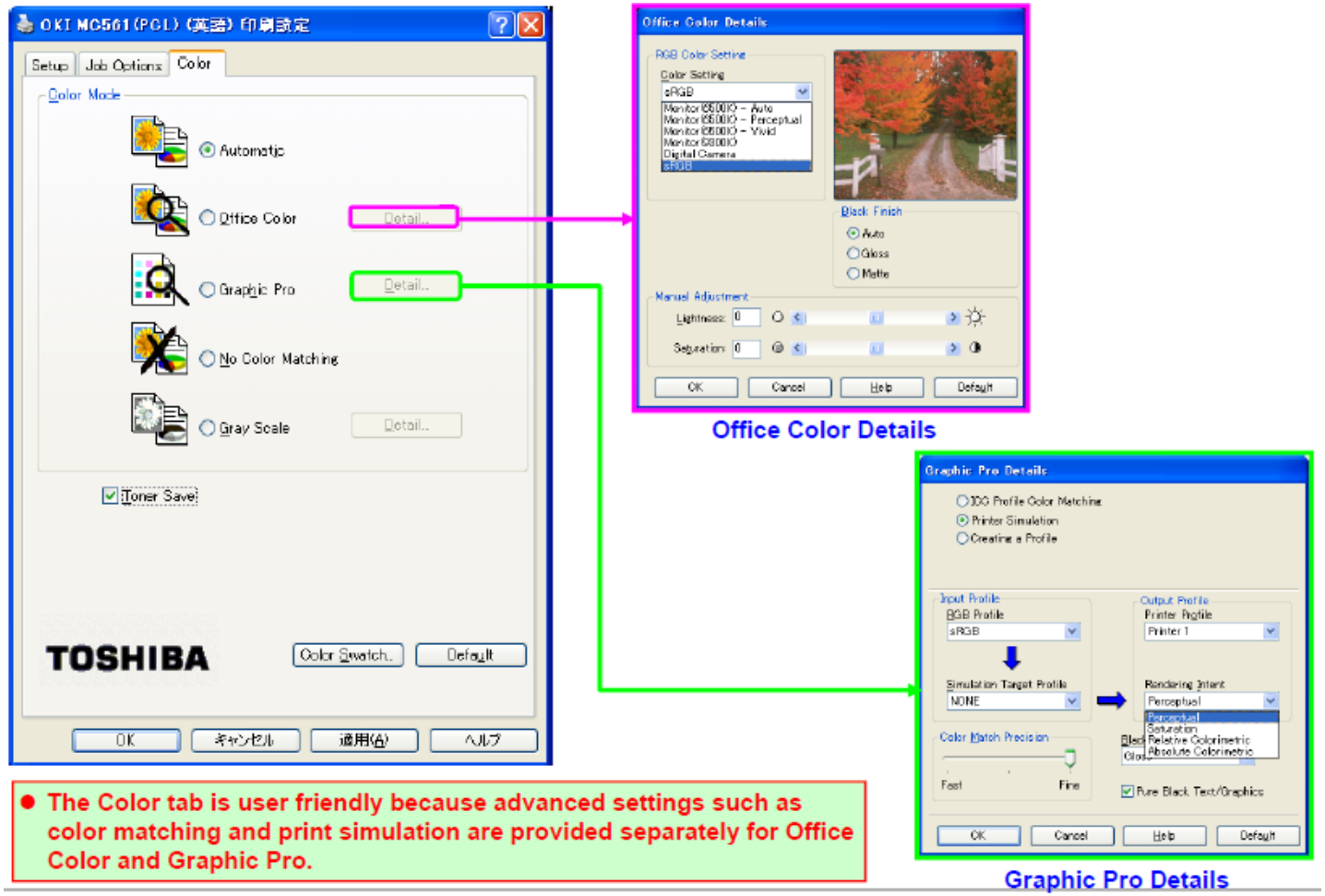
Printer Driver 5/7

Advance layout settings



Printer Driver 6/7

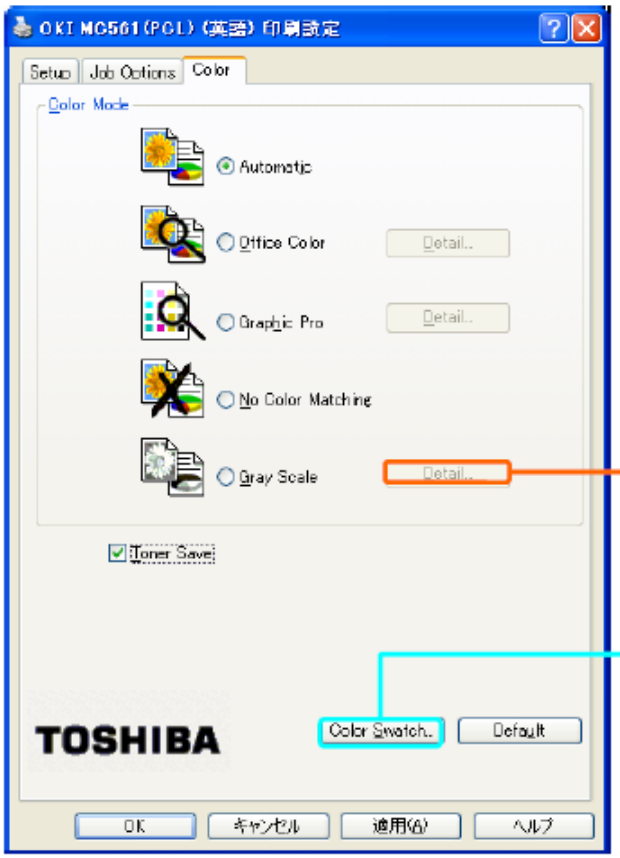
Color settings



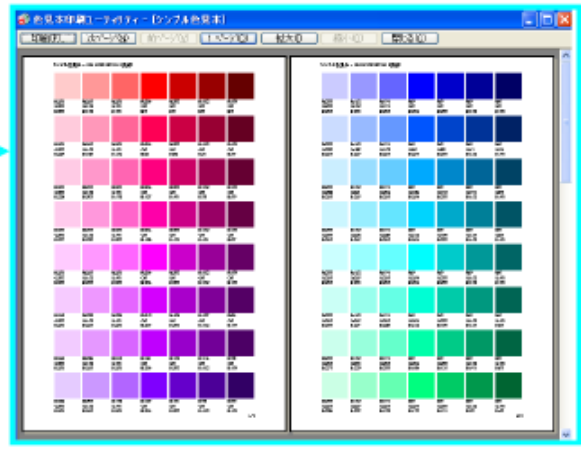
- The Color tab is user friendly because advanced settings such as color matching and print simulation are provided separately for Office Color and Graphic Pro.

Printer Driver 7/7

Color settings



Grey Scale Details



Color Swatch Utility

- If “Color Swatch” is clicked, the “Color Swatch Utility” (included as standard) will be started.

VII. EFMS ver 5.0

EFMS ver 5.0

- From 28 Feb 2011, EFMS ver 5.0 supports eS223CS
- Download patch **EFMS_V5.00_DSPDCM_eS223CSpatch.zip**
- Please visit FTP https://ftp.toshiba.com.sg/eidtech/
- Folder EFMS \ Ver 5.0 \ EFMS 5.00 eS223CS Patch

VIII. Frequently Asked Questions

In the next section, there are 20 FAQs.

FAQs are organised into COPY, FAX, SCAN and PRINT.

Frequently Asked Questions 1/11

COPY

Q1: Toner yield complies with ISO IEC 19798. What is the coverage of the test chart?
A1: It is approximately 5%. To know more about ISO IEC 19798, please visit
http://www.iso.org/iso/iso_catalogue/catalogue_tc/catalogue_detail.htm?csnumber=50015

Q2: On which printed circuit board are counters stored? If the board is changed, can the last counter be restored onto the new board?
A2: For usage report counter (how many A4 colour, mono converted) and scanner counter, they are stored at CU/PU board (CU = Control Unit, PU = Printer Unit), P/N: 44424052. When this board is changed, counter will start from zero. It is not possible to continue from the last counter.

Frequently Asked Questions 2/11

COPY

Q3: Since eS223CS can copy in colour, how does it stop one from duplicating currency bills or committing forgery?
A3: Scanner is able to detect major currencies and stop copying.

Q4: If one tries to copy a currency bill, what happens?
A4: eS223CS will show [*Unauthorised Scan. Error code: X01*]. Press Cancel and MFP returns to normal. MFP does not lock up.

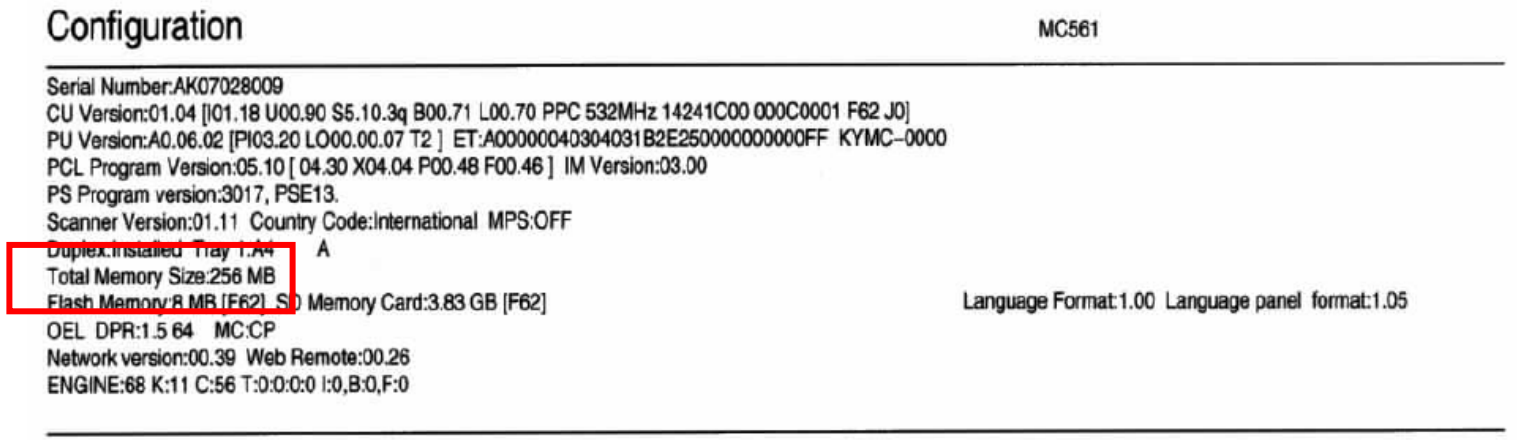
Q5: Admin password and service maintenance password can be changed. What happens if they are forgotten?
A5: If customer forgets Admin password, go to System Maintenance to reset it to default. If Service maintenance password is forgotten, it is NOT recoverable. The only way is to change the PU-CU board.

Frequently Asked Questions 3/11

COPY

Q6: Standard memory is 256MB. Optional memories are 256 MB and 512MB. Can current and newly added memory be displayed?

A6: Yes, at configuration page, web browsing or MFP panel system information. Only total memory is displayed. Example, if total memory is 256 MB, no optional memory is added. If total memory is 768 MB, optional memory 512 MB is added.



Configuration MC561

Serial Number:AK07028009
CU Version:01.04 [I01.18 U00.90 S5.10.3q B00.71 L00.70 PPC 532MHz 14241C00 000C0001 F62 J0]
PU Version:A0.06.02 [PI03.20 LO00.00.07 T2] ET:A00000040304031B2E250000000000FF KYMC-0000
PCL Program Version:05.10 [04.30 X04.04 P00.48 F00.46] IM Version:03.00
PS Program version:3017, PSE13.
Scanner Version:01.11 Country Code:International MPS:OFF
Duplex:Installed Tray 1:A4 A
Total Memory Size:256 MB
Flash Memory:8 MB [F62] SD Memory Card:3.83 GB [F62] Language Format:1.00 Language panel format:1.05
OEL DPR:1.5 64 MC:CP
Network version:00.39 Web Remote:00.26
ENGINE:68 K:11 C:56 T:0:0:0:0 I:0,B:0,F:0

Frequently Asked Questions 4/11

COPY

Q7: It has toner low detection. From toner low detection onwards, approximately how many more copies can be copied/printed before toner is completely empty?
A7: Approximately 200 pages more at 5% coverage can be copied/printed.

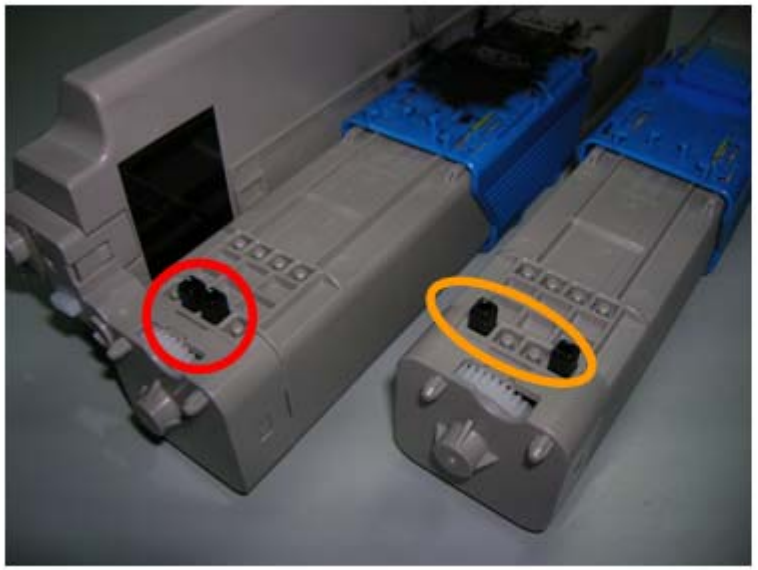
***Q8*:** Fuser unit has two halogen lamps. Are they available as service parts?
A8: No, they are NOT available as service parts. Voltage to lamps may be different for different regions. Therefore, for safety reasons, replacement of halogen lamps in the field is not allowed. If there is any defect, the whole fuser unit has to be replaced.

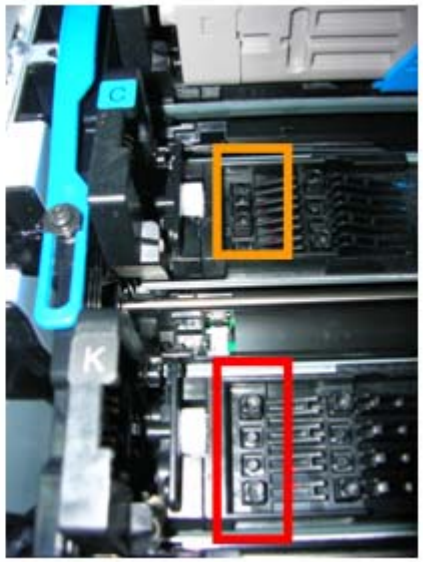
Frequently Asked Questions 5/11

COPY

Q9: Can a Cyan toner cartridge be mistakenly place in the slot for Black toner cartridge?

A9: At the base of each toner cartridge, there are two protruding studs. Locations of these studs are different on C, M, Y and K toner cartridges. This ensures that each toner cartridge fits the correct slot and not any other.





Frequently Asked Questions 6/11

COPY

Q10: How many waste toner boxes are there?
A10: There is only one waste toner box. It is mounted on the black toner cartridge. Waste toners from C, M, Y and K are collected in the same waste toner box.

Q11: Waste toner box is attached to black toner cartridge and is not separable. When waste toner box is full, black toner cartridge has to be changed. Will there be unused black toner in the cartridge?
A11: It is unlikely because during start up or initialization, some black toner will be used. Black toner will be used up first before waste toner box becomes full.

Frequently Asked Questions 7/11

COPY

Q12: Can the power supply unit be repaired?
A12: For safety reasons, it is not possible to repair. The whole unit has to be changed.

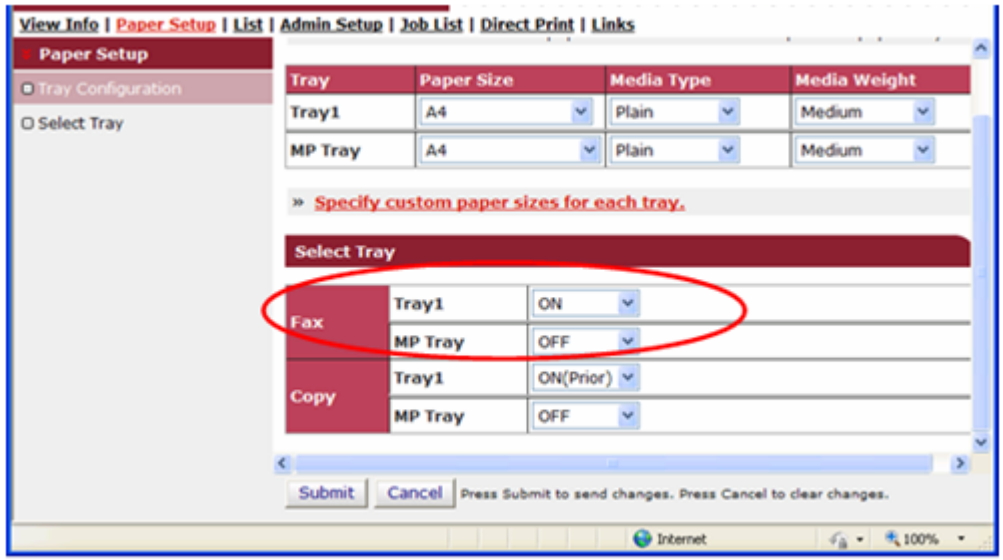
Q13: How does “High Humid” mode prevent copied paper from curling?
A13: Paper curl happens because temperature difference between fuser roller and pressure roller is wide. By setting “High Humid” to on, MFP warm up time is extended. There is more time for heat from fuser roller to transfer to pressure roller. The temperature difference between them becomes narrower and copied paper curls less.

Frequently Asked Questions 8/11

FAX

***Q14**:* There is a Fax function. Can a drawer be dedicated for printing of incoming faxes?

A14: Yes, default is Tray 1. It can be changed to MP Tray as priority or Tray 2 if available. It is also selectable on operation panel.



Frequently Asked Questions 9/11

FAX

Q15: If there is a power failure and there are fax data stored in fax memory, how long will data be retained in memory?
A15: Fax memory is 4MB and Flash RAM is used to store fax data. As Flash RAM is used, the data will be retained in memory indefinitely.

Q16: When incoming faxes are received at eS223CS, can they be transferred to PC?
A16: No, it is not possible. They will be printed as hardcopy.

Frequently Asked Questions 10/11

SCAN

Q17: eS223CS has a USB port for “Scan to USB memory”. What is the specification of the USB memory?
A17: As a rule of thumb, reputable brands of USB memory are recommended. USB memory with encryption will not work.

Q18: **“**pdf” is one of the scanned formats. Are contents in the pdf searchable by a reader?
A18: Originals that are scanned become images. Contents of the pdf is not searchable by a reader.

Frequently Asked Questions 11/11

PRINT

Q19: If non-original 256 MB or 512 MB Memory is used, will there be any error message?
A19: There will not be any error message initially. eS223CS' priority is to use its standard 256 MB memory first. If there is complex printing, optional memory may be used. Incompatibility may be detected at this point and an error message will show.

Q20: After installing optional memories GC-1310 (256 MB) and GC-1320 (512MB), what performance of the MFP is improved?
A20: eS223CS will be able to handle more complex data and high resolution banner printing. For printing (600 x 600 dpri x 2 bit) banner-sheet, adding 256 MB is recommended. Adding 256 MB may reduce the time for (600 x 1200 dpi) or (600 x 600 x 2 bit) duplex printing.

END